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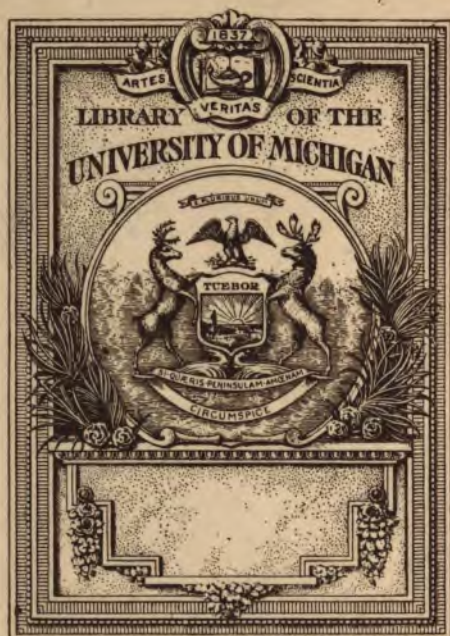
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# THE BOISE SURVEY

J. B. SEARS

EDUCATIONAL SURVEY SERIES



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**EDUCATIONAL SURVEY SERIES**

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# **The Boise Survey**



EDUCATIONAL SURVEY SERIES

# The Boise Survey

## A Concrete Study of the Administration of a City School System

By J. B. SEARS

ASSOCIATE PROFESSOR OF EDUCATION  
LELAND STANFORD JUNIOR UNIVERSITY

*Assisted by*

WILLIAM M. PROCTOR

*and*

J. HAROLD WILLIAMS



YONKERS-ON-HUDSON, NEW YORK  
WORLD BOOK COMPANY  
1920



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## DIRECTOR'S LETTER OF TRANSMITTAL

MR. OLIVER O. HAGA, President Board of Trustees, Boise Independent School District, Boise, Idaho .

*Dear Sir:*

In accordance with the authorization by resolution of your board, of date April 17, 1919, I have the honor to submit to you herewith the complete report of the survey of the public school system of your city.

In carrying out the purposes of your Board the survey staff, consisting of:

J. B. SEARS, Director of the Survey, Associate Professor of Education, Leland Stanford Junior University;

WILLIAM M. PROCTOR, Assistant Professor of Education, Leland Stanford Junior University; and

J. HAROLD WILLIAMS, Director of Research, Whittier (Calif.) State School for Delinquents,

spent approximately two weeks, beginning May 19, in active study and observation of the schools in operation. During that time conferences were held with your board, with the superintendent of schools, and with numerous school principals and other school officers; careful examination was made of financial and educational records, together with the systems used in reporting, recording, filing, and using such data; the whole school plant was thoroughly examined; standard tests were applied in three different subjects to a large number of children in the elementary schools; and numerous observations were made of classroom instruction.

While carrying out this work many data touching the various subjects dealt with in this report were gathered, and, through the courteous assistance of several students from the commercial department of the high school, a considerable amount of preliminary tabulation was effected, thus making it possible to direct our observation and study more definitely to the point while on the ground.

In preparing this report each member of the staff was made responsible for organizing certain materials and for writing certain chapters; yet special point was made of keeping all members in close touch with every line of investigation carried out and, both while in Boise and while writing the report, numerous conferences were held. It is correct to say, therefore, that every main feature of the report represents the judgment of the entire staff. While the Director must assume responsibility for the general plan of the survey and for the editorial work on the report, authorship is otherwise indicated for each chapter.

The report has attempted not only to present conclusions and to make recommendations but to state the facts and reasons upon which such conclusions and recommendations are based. We have tried to speak frankly, either in commendation or condemnation, and if frankness at times seems to approach bluntness it is with the view of convincing the busy citizen of the city that his help is needed if the city is to have a progressive school policy.

It is hoped that one important function of this report will be to reveal to the taxpayers of your city that their schools constitute one of Boise's largest and most important enterprises and one the interests of which are intimately interwoven with all the social, intellectual, religious, civic, and business interests of the city.

The wishes of your board that the schools be in every sense open to the survey staff were fully realized. Special thanks are due Superintendent C. E. Rose and his entire staff of supervisors, principals, and teachers, as well as other school officers, especially including Mr. Charles S. Kingsley, clerk of the board, and also the several high school students above mentioned for the very considerable amount of intelligent assistance which they so cheerfully rendered.

Respectfully submitted,

J. B. SEARS

*Director of the Survey*

STANFORD UNIVERSITY, CALIFORNIA  
December 5, 1919

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# THE BOISE SURVEY

## CHAPTER I

### BOISE'S EDUCATIONAL PROBLEM

(Sears)

THE educational problem which the city of Boise is attempting to solve will be more clearly understood if stated first of all in terms which characterize the community and its people. Who the people are, what they are working at, the geographical, economic, and social forces with which they must cope, all combine, as similar forces do everywhere, to determine the kind of schools that are needed.

Boise is a city of approximately 35,000 inhabitants,<sup>1</sup> located in the broad, fertile valley of the Boise River and in the center of the most densely populated portion of the state. Though the state of Idaho comprises a large area of the western slope of the Rocky Mountain system and holds large mineral resources, it has in the north, and particularly in the south and west portions of the state along the Snake River and its tributaries, very large agricultural possibilities. Government reports show that the soil, climate, and irrigation possibilities all promise a large agricultural future for the state. According to the census report of 1910, about one tenth of the land was in farms, the land of Ada County, 15 per cent of which was then under irrigation. being at that time worth \$125 per acre.

The capital of the state and the county seat of Ada County are located at Boise, which, with its size and other resources, make it the chief center of population between Salt Lake City on the southeast and Spokane and Portland

<sup>1</sup> United States Census estimate for 1917 was 34,547.

on the northwest. For obvious reasons, therefore, Boise should become the educational center, not only of Idaho, but of a goodly portion of the large section of country known as the Inland Empire, and should lead in the establishment of higher and higher standards for public education in that territory, just as Los Angeles leads in the Southwest.

#### BOISE A GROWING CITY

Idaho as compared with the United States as a whole is growing rapidly in population, and the same is true of the city of Boise, as the figures of Table 1 from the United States Bureau of the Census will show. To see just what this means for the city of Boise we have only to compare its rate of growth with that of other cities of its class in the United States. From the 57 cities with estimated populations (1917) of between 30,000 and 40,000,<sup>1</sup> Table 2 presents facts for 26 cities.<sup>2</sup>

TABLE 1

BOISE'S RATE OF INCREASE IN POPULATION AS COMPARED WITH THAT OF IDAHO AND THAT OF THE UNITED STATES

Census	Population of State	Population of Boise	Per Cent Increase over Preceding Census		
			United States	Idaho	Boise
1910 . . . . .	325,594	17,358	21.0	101.3	191.4
1900 . . . . .	161,772	5,957	20.7	82.7	157.8
1890 . . . . .	88,548	2,311	25.5	171.5	21.7
1880 . . . . .	32,610	1,899	30.1	117.4	90.9
1870 . . . . .	14,999	995	. . .	. . .	. . .

<sup>1</sup> See Financial Statistics of Cities Having a Population of over 30,000 in 1917. Department of Commerce, Bureau of the Census, Washington, D. C.

<sup>2</sup> None of the western cities of the 57 were omitted; otherwise all states having cities of this size are represented by at least one such city.

TABLE 2  
 SIZE AND RATE OF GROWTH OF SELECTED CITIES  
 (Government estimates for 1917)<sup>1</sup>

City	Population		Per Cent of Increase	
	1910	1917	1900-1910	1910-1917
1. Tulsa, Okla. . . . .	16,792	31,541	1,208.1	87.8
2. Everett, Wash. . . . .	24,814	35,486	216.6	50.9
3. <b>BOISE, IDAHO</b> . . . . .	<b>27,358</b>	<b>34,547</b>	<b>191.4</b>	<b>26.2</b>
4. Bellingham, Wash. . . . .	24,298	32,985	119.7	35.7
5. Charleston, W. Va. . . . .	22,996	30,500	107.2	32.6
6. Portsmouth, Va. . . . .	33,190	39,651	90.5	19.4
7. Shreveport, La. . . . .	28,015	35,230	75.0	25.7
8. Stamford, Conn. . . . .	25,138	30,907	57.1	22.4
9. Ogden, Utah . . . . .	25,580	31,404	56.8	22.7
10. Niagara Falls, N. Y. . . . .	30,445	37,353	56.5	22.6
11. Brookline, Mass. . . . .	27,792	32,730	39.4	17.7
12. Colorado Springs, Colo. . . . .	29,078	32,971	37.9	13.3
13. Austin, Texas . . . . .	29,869	34,814	34.2	16.5
14. Madison, Wis. . . . .	25,531	30,699	33.2	20.2
15. Stockton, Calif. . . . .	23,253	35,358	32.8	52.0
16. Jackson, Mich. . . . .	31,433	35,363	24.8	12.5
17. Columbia, S. C. . . . .	26,319	34,611	24.7	31.5
18. Aurora, Ill. . . . .	29,807	34,204	23.4	14.7
19. Joplin, Mo. . . . .	32,073	33,308	23.2	3.8
20. Orange, N. J. . . . .	29,630	33,080	22.7	11.6
21. Wilmington, N. C. . . . .	25,748	30,104	22.7	16.1
22. Zanesville, Ohio . . . . .	28,026	30,863	19.1	10.1
23. Easton, Penn. . . . .	28,528	30,533	13.0	7.0
24. Knoxville, Tenn. . . . .	36,346	38,582	11.4	6.1
25. Newport, Ky. . . . .	30,309	31,927	7.1	5.3
26. Elmira, N. Y. . . . .	37,176	38,120	4.2	2.5

From this table it becomes clear that Boise is one of the most rapidly growing cities of its class in the country, ranking third of 26 cities in its rate of growth from 1900 to 1910,

<sup>1</sup> Estimated. See Note 1 above.



and holding high place in the group during the seven years since the last regular census. The city is not crowded, and since it can expand in every direction it need never face the problems which come with too great density of population. With the growth that is practically guaranteed by the soil and mineral resources of the surrounding country, Boise can confidently expect to become a city of 50,000 before many years and accordingly that her expenditures for education will be constantly on the increase.

#### COMPOSITION OF THE POPULATION

##### *1. Racial Groups*

It is not merely the rate of growth in population alone that creates perplexing educational problems in a city. The fact of racial elements is often quite as important. Inquiry into Boise's present and prospective future in this respect therefore is pertinent.

Boise's future will depend upon the development of the eleven Mountain and Pacific Coast states. In 1910 these eleven states had a combined population of 6,825,821. The state of Idaho alone had 325,594, and the city of Boise 17,358. Table 3 shows the racial composition of the people of these groups, together with that for the United States as a whole. While these facts for the city of Boise are not entirely complete, they are complete enough to show that the city does not differ materially from the state as a whole. The facts of this table somewhat condensed, together with figures for the next previous census, are shown graphically in Figure 1 (Boise partially excepted). From this it will be seen, not only that Idaho and the city of Boise stand relatively high in native and white stock, and that the foreign element in the West as compared with the United States as a whole is on the decline, but that for the state of Idaho this decline is more pronounced than it is for either of the western groups of states. This is made even more obvious

TABLE 3  
RACIAL COMPOSITION OF POPULATION

Political Division	Per Cent of Total Population (U. S. Census)							
	White	Negro	Oriental and All Others	Natives, White			Foreign Born White	Total Native (All Races)
				Total	Native Percentage	Foreign or Mixed Percentage		
United States . . .	88.9	10.7	0.4	74.4	53.8	20.5	14.5	85.3
Mountain States . .	95.7	0.8	3.5	79.1	55.7	23.4	16.6	82.8
Pacific States . . .	96.0	0.7	3.3	75.4	50.3	25.1	20.5	77.2
Idaho . . . . .	98.0	0.2	1.8	85.6	62.5	23.1	12.4	86.9
BOISE . . . . .	97.7	0.7	1.6	84.6	67.1	17.5	13.1	86.9

when we consider that the native stock in Idaho has increased from 69.4 per cent of the state's population in 1880 to 86.9 per cent in 1910, or that the foreign group has de-

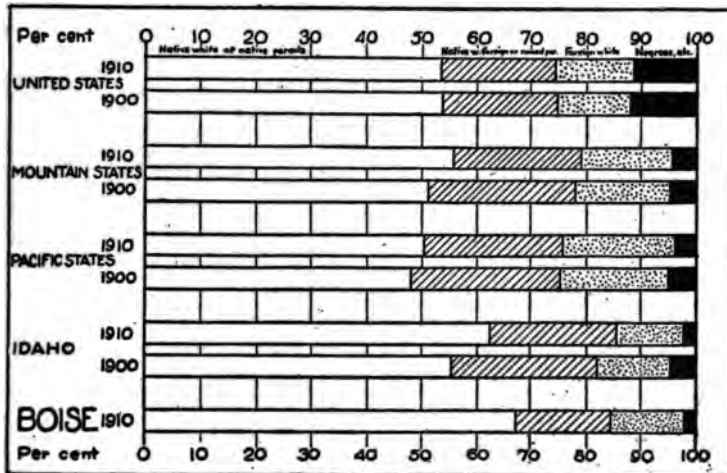


FIG. 1. COMPOSITION OF POPULATION IN BOISE COMPARED WITH THAT OF LARGER AREAS (U. S. Census)

creased in this time from 30.6 per cent to 13.1 per cent of the population. It should be said here, in view of our lack of complete statistics, that foreign faces and names among the school children of Boise, as well as some study of the parentage of the pupils taking tests in this survey, tend to confirm our judgment that the above statistics fairly characterize the population of the Boise Independent School District at the present time, and that it is safe to say that the educational problems produced by the presence of children from foreign countries are at present insignificant, and that in respect to race the city's school population is rapidly becoming more and more homogeneous.

## *2. Age Groups*

The problem of race is but one angle from which we need to study the population of a city in order to be able clearly to state its educational problem. A second question is: How many children has the city to educate, and how many vigorous young adults are there to produce the necessary wealth with which to pay for schools? The answer to this question varies greatly in different parts of the country, as Table 4 shows. This table was compiled from the 1910 census report, and while not entirely accurate for the present it is believed to offer a reasonably correct description of the present population.

From this table, which divides the total population into four groups, it will be seen that there is fairly wide variation among cities in each group, that the distribution for the state of Idaho does not vary widely from that for the United States as a whole, but that that for the city of Boise varies considerably from both.

In this study we are especially concerned with two groups: those 5 to 19 and those 20 to 44 years old. The 5 to 19 years age-group is a fair index to the per cent of the total population for whom regular schooling must be provided. The 20 to 44 years age-group is a fair index to the wealth-

TABLE 4  
AGE DISTRIBUTION OF POPULATION  
(United States Census of 1910)

Name of City	Per Cent of Total Population			
	Under 5 Years	5 to 19 Years	20 to 44 Years	45 Years and Over
United States . . . . .	11.6	30.4	39.0	19.0
Idaho . . . . .	12.4	30.2	40.8	16.6
1. Everett, Wash. . . . .	8.8	18.8	59.4	13.0
2. Stockton, Calif. . . . .	6.3	19.5	46.7	27.5
3. Brookline, Mass. . . . .	6.3	20.2	49.0	25.5
4. BOISE, IDAHO . . . . .	7.5	21.9	50.5	20.1
5. Jackson, Mich. . . . .	8.1	22.8	45.0	24.1
6. Elmira, N. Y. . . . .	7.1	24.3	43.7	24.9
7. Zanesville, Ohio . . . . .	8.8	24.4	43.2	23.6
8. Colorado Springs, Colo. . . . .	7.3	24.5	44.9	23.3
9. Niagara Falls, N. Y. . . . .	10.7	24.5	48.6	16.2
10. Madison, Wis. . . . .	8.8	25.0	45.5	20.7
11. Easton, Pa. . . . .	8.6	25.1	42.0	24.3
12. Bellingham, Wash. . . . .	8.7	25.7	47.7	17.9
13. Aurora, Ill. . . . .	8.7	25.8	42.6	22.9
14. Tulsa, Okla. . . . .	9.7	26.4	49.1	14.8
15. Stamford, Conn. . . . .	11.0	26.8	43.3	18.9
16. Shreveport, La. . . . .	9.1	27.1	45.1	18.7
17. Newport, Ky. . . . .	8.0	27.6	44.3	20.1
18. Columbia, S. C. . . . .	9.7	27.7	46.6	16.0
19. Portsmouth, Va. . . . .	10.1	27.8	46.5	15.6
20. Orange, N. J. . . . .	11.1	27.8	42.6	18.5
21. Wilmington, N. C. . . . .	10.9	27.8	42.1	19.2
22. Joplin, Mo. . . . .	10.6	27.9	43.8	17.7
23. Charleston, W. Va. . . . .	10.8	28.1	45.2	25.9
24. Knoxville, Tenn. . . . .	8.7	28.3	45.8	17.2
25. Ogden, Utah . . . . .	11.9	28.7	42.5	16.9
26. Austin, Texas . . . . .	8.7	29.3	40.7	21.3

producing power of the city so far as men count. An examination of column 2 of this table shows that, judged on this basis, Boise ranks fourth among 26 cities of its class in respect to the smallness of its school population. In other words, of the 26 cities 22 have larger percentages of their respective populations to provide schooling for than has Boise; or, we may say, only three of the 26 cities are in this sense carrying a lighter load than Boise carries.

The vigorous young wealth producers, the men and women who have or will soon take over the political and economic responsibilities for their respective cities, are included in the age-group 20 to 44 years and appear in column 4 of the table. In the 26 cities, we find in this group all the way from 40.7 per cent of the population in Austin, Texas, to 59.4 per cent in Everett, Washington, — Everett being the only city of the 26 with a higher percentage of its population within the limits of these ages than is found in Boise. As to infants 5 years old or less, Boise ranks low, only 4 of the 26 cities having a smaller percentage of their populations in this group.

These figures have a certain significance in defining the education problem for Boise. As compared with other cities, Boise ranks high in young and middle-aged adults and low in infants and children of school age. In other words, when measured by other cities of her class, Boise has large wealth-producing power in comparison with the number of both young and old dependants. Other things being equal, the city of Boise should be able to provide for its children, not average, but decidedly superior educational advantages. If the 5 to 19 years age-group in Boise were 29.3 per cent of the total population, as is true for Austin, Texas, it is obvious that school costs for the city would be very close to one third greater than they are at present.

#### ILLITERACY

Another question of importance is, What percentage of the city's population is illiterate? Our experience with

Bolshevism and with ignorance in general during the recent crisis has convinced leading educators the country over that henceforth illiteracy must be attacked with a definite and clear-cut policy until it is finally stamped out.

The amount or per cent of illiteracy varies greatly in different cities and states throughout the country, as the figures of Table 5 will show. For the United States as a whole, counting all persons ten years old or older, 7.7 per cent are illiterate. For the three Pacific Coast states this figure is 3.0 per cent, for the Mountain states it is 6.9 per cent, and for the state of Idaho it is but 2.2 per cent. Thus Idaho seems to be one of the highly favored states west of the Rockies. When we examine these figures more closely, we find that invariably illiteracy is greater in rural than in urban sections. In the state of Idaho 2.3 per cent of the rural people are illiterate, while the same figure for the urban population is but 1.7 per cent.

TABLE 5  
PERCENTAGE OF ILLITERACY IN THE WEST  
(All persons 10 years old or older — census of 1910)  
Percentage of Population which is Illiterate

Section	Total	Urban	Rural
United States . . . . .	7.7	5.1	10.1
Mountain States . . . . .	6.9	3.1	9.1
Pacific States . . . . .	3.0	2.0	4.3
Idaho . . . . .	2.2	1.7	2.3
Ada Co., Idaho . . . . .	2.9	. . .	. . .
CITY OF BOISE . . . . .	4.1	. . .	. . .

When we examine the Idaho statistics more carefully, however, we discover that Boise is the center at which a large part of the state's illiteracy is concentrated. This

TABLE 6

## PERCENTAGE OF ILLITERACY IN CITIES AND TOWNS OF IDAHO

(All persons 10 years old or older — census of 1910)

City	Per Cent of Population which is Illiterate	City	Per Cent of Population which is Illiterate
Twin Falls . . .	0.3	Idaho Falls . .	1.0
Pocatello . . . .	0.4	Wallace . . . .	1.3
Moscow . . . . .	0.4	Weiser . . . . .	1.3
Lewiston . . . . .	0.4	Nampa . . . . .	1.4
Cœur d'Alene . .	0.7	Caldwell. . . .	1.7
Sand Point . . .	1.0	BOISE . . . . .	4.1

shows clearly when we compare the figures for the cities and towns of the state, as in Table 6, which shows clearly that the responsibility for freeing the state from the dangers of illiteracy rests mainly with the city of Boise. Just how large a burden this is as compared with that which other cities of this class are bearing may be seen from the diagram on page 11, which shows Boise's place among 26 cities of its own class. In this group Boise holds fifteenth place from the top, or roughly a midway position among cities of from 30,000 to 40,000 population in the United States.

This makes Boise's problem very clear. For the state, Boise must bear a large part of the responsibility for doing away with illiteracy. As compared with other cities that responsibility needs to involve only about an average effort and cost.

If at first thought the doing away with illiteracy, most of which is among adults, seems not to be a function of the school, then it is insisted here that in this respect the function of the American public school must be definitely

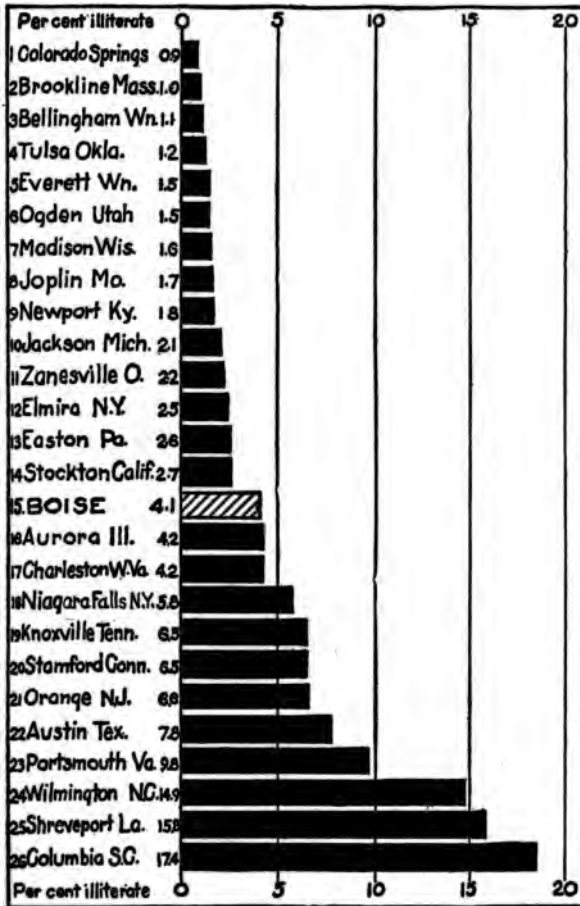


FIG. 2. PER CENT OF ILLITERACY IN 26 CITIES — ALL PERSONS 10 YEARS OLD OR OLDER (Census of 1910)

broadened to meet this great national issue. There is no reason why the public school should be for children only. It should be for all, old as well as young.



## WEALTH AND OCCUPATIONS

As was pointed out above, Boise is a rapidly growing city. Its attractions are not wholly financial, however, and in wealth Boise does not rank close to the top among cities of its class. On the other hand, it does not rank especially low. Considering the present state of development, together with the rate of growth of the present and future sources of Boise's wealth, it is not unreasonable to expect the city to have a relatively large financial future. Being the political center and largest city, it is likely to continue to be the business center of the state. Its wealth increase will depend in large degree upon the development of the resources of the state, and this promises much, for as yet it can hardly be said that the state's resources have been touched. The great possibilities are agriculture, timber, and minerals. The 1910 census report showed the following occupational distribution of the inhabitants of the state who were ten years old or older:

Engaged in agriculture, forestry, and animal husbandry . . . .	43.3 per cent
“ “ extraction of minerals . . . . .	5.2 “
“ “ manufacturing and mechanical industries . . . . .	17.6 “
“ “ transportation . . . . .	9.1 “
“ “ trade . . . . .	8.2 “
“ “ professional service . . . . .	5.2 “
“ “ domestic and personal service . . . . .	7.1 “
“ “ clerical occupations . . . . .	2.5 “
“ “ public service not included above . . . . .	0.9 “
Total . . . . .	99.1 per cent

A similar up-to-date distribution would likely vary slightly from this, but that the same fields would dominate there is little doubt. During the last three census periods the amount of land in the state devoted to agriculture has increased at the rate of two million acres per decade, and the indication of recent statistics is that this rate has continued.<sup>1</sup>

It is in respect to these and similar facts about the re-

<sup>1</sup> See Third and Fourth Annual Reports of the Department of Farm Markets, State of Idaho, 1917-1918, Boise, Idaho.

sources of the state and their use and development that public education in the state must direct no small portion of its energy.

In actual wealth Boise's position among the cities of her own class is indicated clearly by Table 7, on page 14.

While Boise's position is somewhat below the average, it is still not a poor city, and its position is likely to become better as the state develops. In other words, Boise's financial position does not argue that the city should not come up to the average in expenditures for education.

#### HOW THE CITY SPENDS ITS MONEY

##### 1. *Boise's Income*

There is wide diversity among cities as to the ways in which they obtain and expend their revenues, and from the standpoint of education as well as from that of business this is a question of importance. Boise has an assessed valuation of over twenty millions of dollars and in 1917 levied a tax of over a half million. This money was derived from the following sources:

Taxes on property . . . . .	59.8 per cent
Business and non-business licenses . . . . .	1.3 "
Special assessments and special outlays . . . . .	23.6 "
Fines, forfeits, escheats, etc. . . . .	0.8 "
Subventions, grants, gifts, donations, and pension assessments . . . . .	10.6 "
Earnings of general departments . . . . .	2.0 "
Highway privileges, rents, and interest . . . . .	0.9 "
Earnings of public service enterprises . . . . .	1.0 "

To raise this sum the city levied a tax of \$27.75 on each \$1000 of assessed wealth, or \$18.04 on each \$1000 of real wealth. This means that it cost the people \$19.16 per capita to run their government.

Is this a high tax rate and is this a high cost of government? The answer is seen in Table 8, which shows the facts for 26 cities.

TABLE 7

ASSESSED WEALTH AND REAL WEALTH PER CAPITA POPULATION<sup>1</sup>

City	Assessed Wealth	Basis of Assessed Wealth	Real Wealth
1. Brookline, Mass. . . . .	\$3923.58	100%	\$3923.58
2. Stockton, Calif. . . . .	767.66	35-30	2242.77
3. Madison, Wis. . . . .	1809.14	94-78	1986.39
4. Charleston, W. Va. . . . .	1190.33	70	1819.58
5. Columbia, S. C. . . . .	455.42	25	1786.08
6. Shreveport, La. . . . .	637.31	40	1593.28
7. Aurora, Ill. . . . .	280.39	23	1219.10
8. Stamford, Conn. . . . .	1180.35	100	1180.35
9. Niagara Falls, N. Y. . . . .	1012.35	90	1149.02
10. Colorado Springs, Colo. . . . .	1095.53	100	1095.53
11. Wilmington, N. C. . . . .	577.01	50	1088.61
12. Easton, Penn. . . . .	753.67	70	1076.67
13. Jackson, Mich. . . . .	1056.35	100	1056.35
14. Ogden, Utah . . . . .	1003.14	100	1003.14
15. Tulsa, Okla. . . . .	771.62	75	1002.49
16. Zanesville, Ohio . . . . .	997.92	100	997.92
17. Knoxville, Tenn. . . . .	645.06	70	925.88
18. Austin, Texas . . . . .	689.39	75	919.18
19. <b>BOISE, IDAHO</b> . . . . .	<b>558.14</b>	<b>65</b>	<b>858.14</b>
20. Elmira, N. Y. . . . .	734.60	87	844.37
21. Joplin, Mo. . . . .	330.02	40	840.21
22. Bellingham, Wash. . . . .	324.39	40	810.97
23. Everett, Wash. . . . .	391.56	50	783.12
24. Orange, N. J. . . . .	698.29	100	698.29
25. Portsmouth, Va. . . . .	405.57	55	684.96
26. Newport, Ky. . . . .	522.04	80	676.27

From this table it will be seen that the highest rate, based on estimated real value rather than on assessed value, was paid at Everett, Washington, and that the lowest was paid at Columbia, South Carolina, and that Boise occupied a median position. Considering the fact that Boise occupies

<sup>1</sup> From Financial Statistics of Cities, etc., 1917, above cited.

TABLE 8

TAX RATE AND PER CAPITA COST OF CITY GOVERNMENT

(United States Census Statistics of 1917)

City	Rate of Levy of General Property Taxes per \$1000 of		Per Capita Cost of All Govern- ment
	Assessed Valuation	Estimated True Value	
1. Everett, Wash. . . . .	\$50.60	\$25.30	\$52.18
2. Tulsa, Okla. . . . .	32.20	24.79	53.74
3. Elmira, N. Y. . . . .	27.27	23.73	29.90
4. Orange, N. J. . . . .	23.73	23.73	19.40
5. Stamford, Conn. . . . .	23.01	23.01	31.12
6. Niagara Falls, N. Y. . . . .	24.99	22.61	32.91
7. Knoxville, Tenn. . . . .	31.90	22.23	29.06
8. Austin, Texas . . . . .	28.80	20.85	35.67
9. Colorado Springs, Colo. . . . .	20.62	20.62	20.10
10. Bellingham, Wash. . . . .	51.29	20.52	23.00
11. Ogden, Utah . . . . .	20.50	20.50	21.20
12. Jackson, Mich. . . . .	19.90	19.90	29.41
13. Newport, Ky. . . . .	25.86	19.19	13.00
14. <b>BOISE, IDAHO</b> . . . . .	<b>27.75</b>	<b>18.04</b>	<b>19.16</b>
15. Zanesville, Ohio . . . . .	17.20	17.20	18.61
16. Aurora, Ill. . . . .	69.83	16.06	20.83
17. Wilmington, N. C. . . . .	30.00	15.91	17.63
18. Shreveport, La. . . . .	38.75	15.50	43.82
19. Joplin, Mo. . . . .	38.30	15.18	25.88
20. Madison, Wis. . . . .	16.50	15.02	44.91
21. Brookline, Mass. . . . .	14.80	14.80	55.36
22. Stockton, Calif. . . . .	40.96	12.98	40.93
23. Easton, Pa. . . . .	19.27	12.13	13.64
24. Charleston, W. Va. . . . .	17.92	11.72	25.44
25. Portsmouth, Va. . . . .	18.59	11.04	12.26
26. Columbia, S. C. . . . .	41.00	10.46	25.47
Average 26 Cities . . . . .	29.65	18.19	29.02

a much lower position among these cities in point of per capita wealth (see Table 7), we should expect her to hold a higher than median rank in tax rate if she gave her children average school advantages. We must not fail to see, too, that the western cities, with which Boise is especially comparable, have a higher rate than has Boise. All together this argues plainly that Boise could have a somewhat higher tax rate without doing more than other cities of her class are doing.

## *2. Distribution of Expenditures*

A further question of importance is, How are the city's revenues used? In column three of Table 8 above it will be seen that Boise's per capita cost of government is very much lower than that for most of the cities included in this group. In fact, but 5 of the 26 cities pay less per capita for government than does Boise. How, then, one may ask, does Boise spend her money?

Figure 3 shows a full statement of how Boise spends each dollar of her revenues. From this it will be seen that 46.9 cents out of each dollar goes to maintain schools, 7.8 cents to govern the city, 16.9 cents to protection of person and property, etc.

In these important items of expenditure it is important to locate Boise's position among the cities of her class. This is brought out clearly by Table 9, which shows for 26 cities the per cent of total city expenditures devoted to the three important items of education, general government, and police protection.

In expenditure for education Bellingham, Washington, holds the highest place, devoting 63.7 per cent of her total expenditures to schools; Columbia, South Carolina, holds the lowest place, with 20.3 per cent; and Boise the fourth place from the top, with 46.9 per cent. In expense for government the range is from 14.6 per cent in Tulsa, Oklahoma, to 6.4 per cent in Madison, Wisconsin. This figure

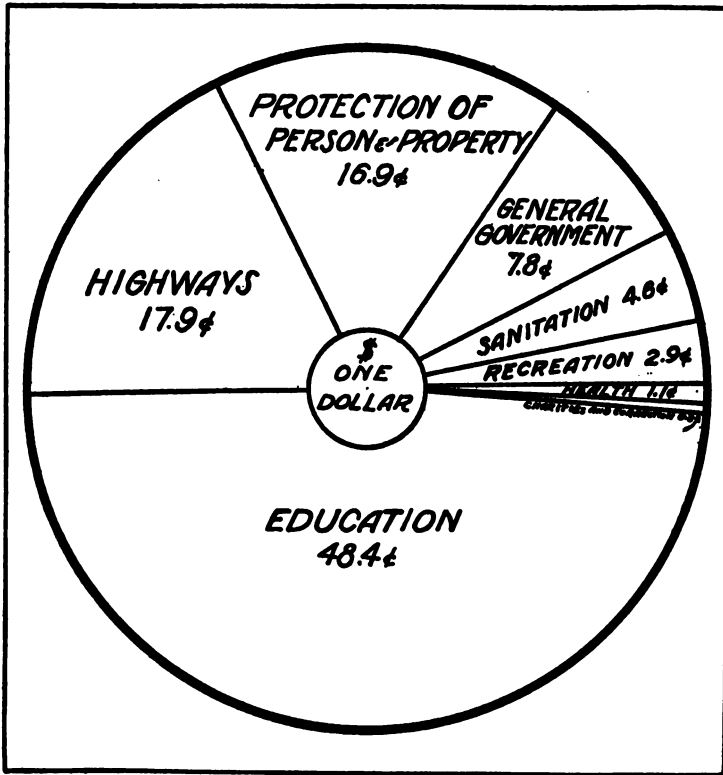


FIG. 3. HOW BOISE SPENDS ITS DOLLAR

for Boise is 7.8 per cent. As was shown in Table 8, Boise spends relatively less on her government than is spent by any of these 26 cities. In cost of police protection Boise holds the lowest place, devoting only 4 per cent of her total expenditures to this item, while other cities range as high as 16.4 per cent.

It must be said, then, that Boise spends her income wisely. Indeed, the city occupies an enviable position in the matter of spending the money which it derives from taxes, and we

TABLE 9

PERCENTAGE OF CITY EXPENDITURES DEVOTED TO EDUCATION,  
GENERAL GOVERNMENT, AND POLICE PROTECTION

(Financial Statistics of Cities, United States Census Bureau, 1917)

City	Per Cent to Education	Per Cent to General Government	Per Cent to Police Protection
1. Bellingham, Wash. . . . .	63.7	8.1	6.1
2. Everett, Wash. . . . .	56.2	8.7	6.4
3. Colorado Springs, Colo. . . . .	48.6	9.3	6.7
4. BOISE, IDAHO . . . . .	46.9	7.8	4.0
5. Charleston, W. Va. . . . .	46.5	13.4	9.2
6. Easton, Pa. . . . .	46.2	7.6	6.8
7. Orange, N. J. . . . .	45.3	7.9	10.0
8. Ogden, Utah . . . . .	44.8	14.6	8.1
9. Aurora, Ill. . . . .	44.7	7.4	9.8
10. Madison, Wis. . . . .	42.8	6.4	5.4
11. Stockton, Calif. . . . .	41.3	9.3	7.1
12. Elmira, N. Y. . . . .	39.9	10.8	8.5
13. Zanesville, Ohio . . . . .	39.4	10.7	9.0
14. Austin, Tex. . . . .	37.4	8.4	7.4
15. Joplin, Mo. . . . .	36.3	12.0	12.5
16. Newport, Ky. . . . .	34.6	12.4	11.8
17. Stamford, Conn. . . . .	34.2	8.3	6.2
18. Jackson, Mich. . . . .	33.6	10.1	6.8
19. Knoxville, Tenn. . . . .	33.6	8.0	10.7
20. Tulsa, Okla. . . . .	32.8	14.1	9.6
21. Portsmouth, Va. . . . .	32.3	13.1	11.2
22. Niagara Falls, N. Y. . . . .	28.4	9.1	7.8
23. Shreveport, La. . . . .	24.9	9.0	10.9
24. Wilmington, N. C. . . . .	23.6	9.4	15.6
25. Brookline, Mass. . . . .	23.3	7.5	9.1
26. Columbia, S. C. . . . .	20.3	8.1	16.4

can only advise the people of Boise to maintain that reputation, keeping Bellingham's high mark in percentage spent on schools and a somewhat higher tax rate, as suggested above, as desirable marks yet to attain.

#### THE PROBLEM STATED

Keeping in mind the more modern conception of the school, and of the place and function of education in society, viz.: that the school is not to be isolated from other social interests; that the teaching of reading, writing, and arithmetic are not its sole functions; that education has as much to do with real occupations, real civic and social duties and obligations, real people, real things, and real conduct of men in a real society as it has to do with books and theories; and finally that educational opportunities should be available for old as well as young, let us set forth the general suggestions that are brought out by the above social, geographical, and economic facts about Boise.

1. Boise is a rapidly growing city. (1) She must therefore erect buildings, purchase equipment, develop library facilities, and organize her teaching and supervision forces with this rapid expansion in mind. (2) She should adopt a pay-as-you-go policy and keep bonded indebtedness at a relatively low mark.

2. The population of the city is mainly and increasingly of native stock. (1) This means that the schools are largely free from the educational burden and from the attending cost of caring for a large foreign element. (2) This should make possible relatively higher standards of cost in other lines than obtain in cities with large numbers of foreign children. (3) It should also make possible relatively high standards of achievement among the pupils.

3. The city ranks high in young and middle-aged adults and low in infant and aged dependants, also low in children of school age. (1) This means that the city has a relatively lighter burden to bear in providing schools, and a relatively high earning power to care for the cost, (2) which argues



that Boise could spend considerably more per pupil for schools than is spent by the average city of her class and still be making no more than average sacrifice to education.

4. In point of wealth Boise is slightly less than an average city of her class but with fair prospect of bettering her position. In view of other facts, — the racial homogeneity of her people, the relatively small school population, and the relatively large percentage of young adults, — this position with respect to per capita wealth does not argue for low expenditure per pupil for schools. Instead, it should argue for a slightly higher than average tax rate for schools.

5. In the matter of illiteracy Boise, though in a highly favored section of the country, occupies only a median position among cities of her class, and is unquestionably the center of illiteracy for the state. This calls loudly for night schools and continuation education as a feature of the city's school system.

6. In occupations the city is essentially a residence community, but it is located in the midst of a rich undeveloped agricultural district and is the political and business center of the state. This calls especially for strong agricultural and commercial departments as well as for good average mechanical departments in the high school.

7. The city taxes its wealth at a relatively low rate for cities of that class. Considering its low per capita wealth, one would expect a relatively high tax rate if the city means to have as good schools as are maintained by other cities.

8. The city spends a relatively high proportion of its income on education. This shows good management and indicates that the people of the city want and will support a strong constructive educational policy.

In a word, then, the city is able to have the best, and is morally responsible to a wide territory to furnish a demonstration of the best that can be worked out in

educational practice in that part of the United States. What the city has to show, the extent to which it is exercising such leadership, and the way it is meeting its educational problems, we shall try to answer in the following chapters.

## CHAPTER II

### ORGANIZATION AND ADMINISTRATION

(Sears)

#### THE LEGAL STATUS OF THE DISTRICT

IN attempting to answer the question, how has Boise met and solved her educational problem, it must be kept in mind that that problem has not always been the same. Boise's educational needs have changed greatly since 1866, when the city first received a charter, or since 1890, when Idaho became a state. Its population has doubled several times; illiteracy and the percentage of foreigners have greatly decreased; new industries have grown up; wealth has accumulated; and the city has come to occupy a place of influence; all of which means that Boise's educational aims, and therefore her plans for education, have had to change. In 1883 the city Board of Education reported but one school building and 351 pupils. At present there are eleven buildings<sup>1</sup> and more than 4000 pupils, the city being laid out in attendance districts, as shown in Figure 4.

Article IX of the constitution of the state of Idaho declares it to be the duty of the legislature of Idaho "to establish and maintain a general, uniform, and thorough system of public, free common schools," and vests the power of supervision of the schools in a state board of education. Long before this constitution was adopted (1889), however, the territorial legislature had enacted many laws affecting education, among which was an act (1881) creating the Boise Independent School District. The powers of this district have since been enlarged, till now, in addition to

<sup>1</sup> One of which is in process of erection.

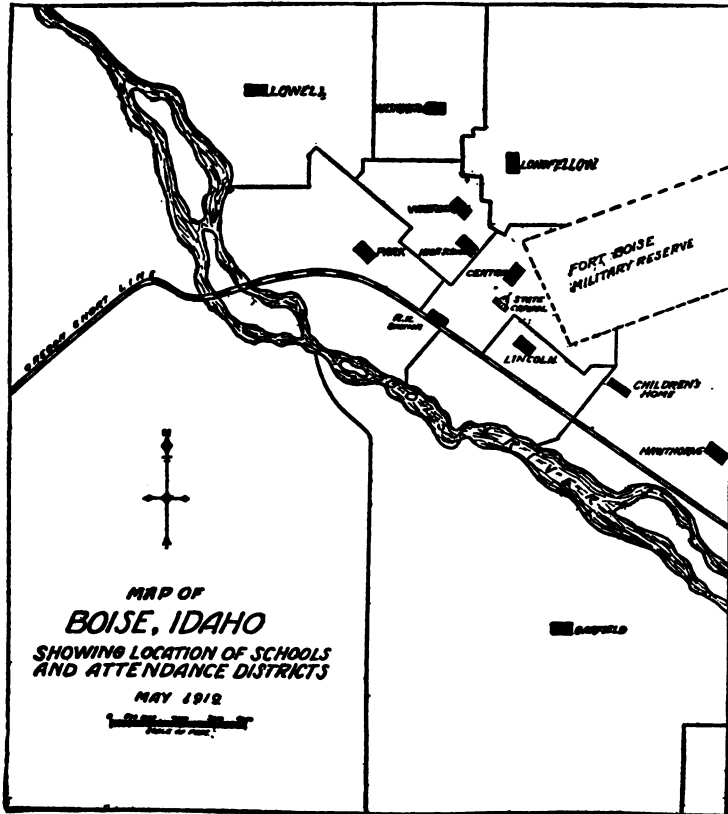


FIG. 4

the usual corporate powers, the trustees of this district may devise their own course of study, select their own textbooks, determine the qualifications of their teachers,<sup>1</sup> provide teachers' retirement funds, old age insurance, and permanent disability funds, and fix the length of their school day.

<sup>1</sup> The teachers of Boise are not required to hold a state or county certificate.

It should be pointed out here that these powers have been granted *by the state of Idaho*, for the benefit of such of the *state's* schools as happened to be within this district, and that these powers were granted to a *school district* and not to a *city*. As shown in Figure 5 the district boundaries are at almost no point coextensive with those of the municipality. The Board of Education is thus carrying out a state function, and is responsible to the state for the proper exercise of its powers. Not for the welfare of the people of Boise alone, therefore, but for that of the entire state, the school policy of the district must be conceived and carried out by the board.<sup>1</sup>

#### SIGNIFICANCE OF SUCH WIDE LEGAL POWERS

It is doubtful whether the powers of any public school board in the state surpass the powers of this board. The responsibilities of a board must be proportionate to the powers it has been granted. Accordingly the people of Boise must expect their board to conduct the schools of the city in terms of a broad policy which has been constructed in the light of the conditions and needs of the large territory of which Boise is a natural center. Apparently the city has no immediate need for farmers or stock breeders. Yet the development of the state, and of the whole Northwest, in fact, await the coming of men trained in these fields. It is therefore Boise's duty to the state to establish courses in agriculture. This merely illustrates the way in which the Board of Education must approach its problems.

While there is little danger of our pointing too emphatically to the responsibilities which the district has assumed in accepting from the state the powers of an Independent School District, we must not fail to point with equal emphasis to the excellent opportunities which such wide powers provide. The district is free from the possible evils of too

<sup>1</sup> See especially reference to the problem of illiteracy in the state, on page 9.

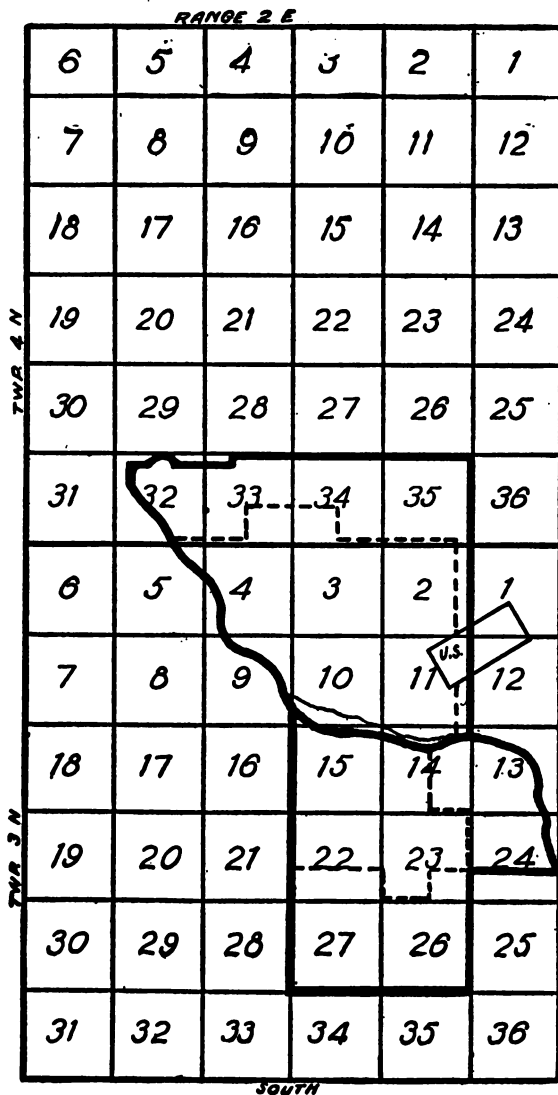


FIG. 5. MAP SHOWING BOISE'S DISTRICT AND MUNICIPAL BOUNDARIES (DOTTED LINE SHOWS CITY BOUNDARIES)

much state uniformity, as uniformity of textbooks; and from state interference in matters of a strictly local character, as in the development of continuation courses; and accordingly it should find it possible to build up a plan of education very thoroughly adapted to the ends they wish to attain. That is, by her natural position, Boise is not only responsible for providing broad educational leadership for the state and adjacent territory, but the state has provided the district with almost unlimited power, together with a proper portion of state funds, with which to develop that leadership. Within her proper financial limitations, then, Boise should become the educational experiment station and demonstration center for the state.

#### THE ADMINISTRATIVE ORGANIZATION

As pointed out above, the machinery for directing the schools of the Boise Independent District was devised and established by the state of Idaho. The first in authority, therefore, is the state; that is, the people of Idaho, who act through their constitution and their legislature. The constitution calls for a system of schools to be supervised by a state board of education, and the legislature has constituted that board of six members, five appointive and one *ex officio*. The five members are to be appointed by the Governor, and the State Superintendent of schools is to serve *ex officio*. This board, through the State Superintendent, supervises the schools of the state somewhat minutely, except in the case of independent districts, where the board's supervision is slight and somewhat indirect, being limited mainly to its power to apportion the state school fund and taxes among the counties, to require reports of attendance, etc. Similarly the county superintendent serves the schools of Boise in a limited way, caring for apportionment of funds, payment of tuition by pupils, adjustment of district boundaries, etc., all in accordance with established laws.

As provided by special charter, the schools of this district

are managed by a board of six trustees elected at large by the people, each for a term of six years. In accordance with its rules and regulations the president of the board appoints the following standing committees:

1. Committee on Auditing and Finance;
2. Committee on Buildings and Grounds;
3. Committee on Purchasing and Insurance;
4. Committee on Teachers and Salaries;
5. Committee on Textbooks, Instruction, and Discipline.

Under the direction of the board and its committees, the following general plan of organization for the schools has been developed and is now in operation. At the head, and serving as the board's chief executive officer, is the superintendent of schools, under whom are the general and special supervisors, principals, and teachers. These main features of the organization, together with other details, are shown

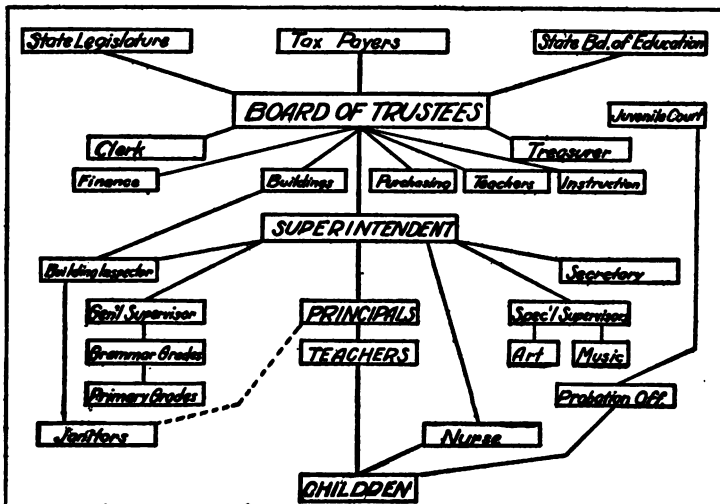


FIG. 6. PRESENT ADMINISTRATIVE ORGANIZATION OF THE SCHOOLS OF THE BOISE INDEPENDENT SCHOOL DISTRICT



clearly in Figure 6, which also indicates the various lines of authority approximately as they operate in the system.

#### IMPERFECTIONS IN ORGANIZATION

##### *1. Boise's Plan not Unlike That of Other Cities*

The plan of organization here described is not unlike that in effect in many cities of this size. Small boards are decidedly the rule, though boards of five or seven members are more common than are boards of six members. In most cases such boards are elected by the people at large for three-year terms, and carry on much of their work through standing committees of three members. In these respects, therefore, Boise is following what appears to be the accepted — but, we must add, the traditional — practice over the country.

##### *2. Objections to Standing Committees*

There is no particular objection to the size of Boise's board, nor to its tenure and methods of election. There is, however, objection to the standing committee method of carrying on its work. For nearly a decade no single problem has received more serious consideration by our leading thinkers and writers on educational administration than has the question of how school boards shall conduct their business. The outcome of this study is a general agreement to the effect that standing committees are in no way helpful, and that they are not infrequently a means of mismanagement and interference with the technical and professional functions of expert officers.<sup>1</sup> As the plan works in Boise, little concrete evidence was available to show any evil effect upon the schools direct. The committees are definitely subordinate to the board, having no general power to act

<sup>1</sup> See Cubberley, Ellwood P., *Public School Administration*, Chapter IX, Houghton Mifflin Company; Hanus, Paul H., *School Efficiency: A Constructive Study Applied to New York City*, Chapter VIII, World Book Company.

on any question. Yet all of the work done by committees might, in the judgment of the writer, be better done in other ways. For a committee of three busy men to toil through the process of auditing the long list of large and small expenditures which accumulate each month seems extremely wasteful of time. Again, the selection, tenure, and salaries of teachers, the selection of textbooks, questions of instruction and discipline, all are problems whose proper solution not only requires time but also a high degree of professional skill, such as lay board members usually do not possess.

Special committees may and frequently should be used by the board for examining situations, gathering facts, assisting in large business transactions, etc., but never should questions of any importance be either actually or even practically decided by any less than the full membership of the board whom the people have chosen to manage the schools.

Without mentioning all the evils that have been found associated with committee methods, it is enough here to say that all are a possibility in Boise as soon as even moderately weak executive officers are placed in charge of the schools. A partial illustration is already at hand. All Boise's elementary school principals teach practically full time, and so, however strong executives they may be, they are forced to neglect many of the duties that ordinarily fall to that office. The result is that janitors have come to take orders from the building inspector only, who works mainly under the direction of the committee on buildings and grounds. This is educationally impracticable if not intolerable. One principal, when asked why the water was shut off from the fire hose, replied, "I have called the janitor's attention to that situation, but he told me that the building inspector had ordered him to keep the water closed off." If such an order actually was given it was ridiculous, and even dangerous in case of fire. That the janitor politely or otherwise ignored the authority of the principal is a situation that should be immediately remedied.

Boise's committees should be done away with, however,

not only to prevent waste and friction but because there are better and safer methods of handling the business. The need for a standing committee on auditing and finance would disappear if at the beginning of the fiscal year the board would adopt a budget and place in proper hands the expenditure of all funds.<sup>1</sup> At the end of the year a special audit of all accounts by a certified accountant would solve the question.

The employment of teachers should be left solely to the superintendent, who would also determine salaries and promotions in accordance with a policy definitely stated and adopted by the board. No board member or committee should presume to handle questions of textbooks, discipline, and instruction, and it should surely be the board and not a part of it that selects sites, adopts budgets, employs architects, and erects buildings, and the superintendent and principal who should handle the lesser problems now handled by the committee on buildings and grounds.

This seems to give the superintendent wide powers and much to do. That is as it should be. At the present time Boise's superintendent has to devote entirely too much of his time to the supervision of instruction and has left too little for the larger and more important functions of the chief administrative officer of a city school system. Boise is not a great city, but neither is it a country village. Accordingly it should begin to adopt big business and big educational methods of operation.

Further, it may be asked, what is there left for a board of education to do if the superintendent is to function so broadly? The answer is: (1) legislate for the schools; (2) adopt a policy and frequently examine the evidence that that policy is being carried out; (3) and administer certain laws as required by the state. To illustrate, the board must fix the special tax levy; determine tuition rates; pass on all proposed extensions of the school system; select

<sup>1</sup> See Chapter XII for discussion and recommendations touching this question.

a superintendent when necessary; sanction or veto other appointments; select school sites; create a teachers' retirement fund; take care of bond issues, sales, and redemptions; appoint school architects and auditors of accounts; determine length of school term and dates of opening; establish salary schedule and promotion rules; care for school elections; pass on purchases of fuel, supplies, and furniture, and keep itself fully informed as to the extent and conditions of the schools. Innumerable other typical items could be added. These are suggested as fully representative of the kinds of business that should be transacted by a board of education. It is believed that if the board will serve well in the capacities suggested by the above items of business, it will render the best possible account of its stewardship.

### *3. A Weak Plan of Supervision*

A second and fundamental weakness of the plan of organization outlined above has just been suggested; viz., the plan for carrying on supervision of instruction. In Figure 6 this weakness is not fully apparent. Supervision is carried on by three sets of officers: general supervisors, special supervisors, and in very limited measure by principals. There are two general supervisors, one for the grammar grades and one for the primary grades, the former being handled by the superintendent. When we consider that principals teach nearly all their time, and that special supervisors cover only a limited portion of the curriculum, we are forced to realize that anything like adequate service for the grammar grades will call for a very large portion of the superintendent's time.

### *4. Duties of a City Superintendent*

It seems worth while to set forth here some of the more important functions of a city superintendent of schools, as indicated by the best practice over the country at the present time. Without attempting to list these functions in any

special order, we would say that the following are of first importance:

1. Entire control of all teachers, principals, supervisors, and other special officers (as truant officer, clerical help, building inspector, librarian, etc.) having to do with matters of instruction. This should mean power of appointment, transfer, promotion in rank or salary, and dismissal. He should have almost equally wide control over the purchasing agent and business manager.

2. The selection of textbooks and supplies. Decisions in all such matters will not be reached without the help of teachers and supervisors having special knowledge of the needs of the schools.

3. The development and revision of courses of study. Here again for several reasons the intimate knowledge of teachers and supervisors will be utilized.

4. Preparation of the annual budget estimates to be passed upon by the board.

5. Keep the public and the board fully informed. Brief but carefully prepared reports of the conditions and needs of the schools should be laid before the board at each meeting, to the end that the board may legislate promptly and intelligently and keep to a unified school policy. Certainly a city as large as Boise should publish an annual report of its schools.

6. Furnish professional leadership and stimulate industry and enthusiasm among all teachers and officers, keeping the essential aims of education before his staff of assistants.

No superintendent of schools in Boise can live up to the large possibilities suggested by these general headings and devote the time now being devoted to detailed supervision of instruction. Furthermore, it is too expensive a program for the city to use its highest-paid official largely as a supervisor of instruction, however excellent his work in that capacity may be.

The weakness of the present system is further evidenced by the attitude which principals show toward the methods

now used. There seems to be a general feeling that there is a lack of coördination in the work of the schools and that much of the work now being done by the general supervisors does not get results, for the reason that it is not properly followed up by the principal or some one on the ground.

An adequate plan of supervision for the schools of Boise would exchange the present system for the following: the superintendent would be a general supervisor of all work, operating largely, though not exclusively, through others; there should be a supervisor of primary work with the entire city for a field, much as at present; there should be one principal for the three schools of Central, Lincoln, and Hawthorn districts, who would devote full time to administrative and supervisory duties; in similar fashion one principal could handle Longfellow and Whittier schools; all other schools should have principals devoting from half time in the smallest to full time in the largest schools to supervision; finally there should be supervisors of the special subjects of art, physical training, play, music, manual training, and domestic science.

This would make the principalships of the Boise schools attractive positions. At present the principal, except in the high school, is merely the head teacher, and is not thought of, nor is he treated by his fellow teachers, as a principal. Live young men will not remain long in such positions, as Boise's history clearly proves. The present policy will in course of time place old, worn-out teachers at the head of the schools, whereas such positions should be in the hands of the aggressive, professionally alert type which is aspiring to larger usefulness in the profession.

### *5. Improper Control of Building Inspection*

A third weakness of the plan of organization, perhaps a minor one, is the present status of the building inspector and of janitors. The building inspector should be appointed

and supervised by the superintendent,<sup>1</sup> and the janitors, though they may work largely under the supervision of the building inspector, should certainly be expected to respond promptly to any request from the school principal. An efficient janitor is one who is capable of carrying out orders pertaining to the sanitary condition of the building and of attending to the innumerable little tasks of mending, distributing supplies, shifting furniture, etc. A janitor who does such work well will not find time to dictate the policy of the school.

#### 6. *Attendance Machinery Weak*

A fourth weakness of the organization is found in the machinery for handling attendance problems. At present no attendance officer is provided. In case of truancy the child is reported to the probation officer of the juvenile court of the county and is, in a sense, haled before that court even though the offense is very slight. In other words, the boy is treated as if he were a confirmed delinquent.

It is one of the most important functions of the school to find among its children any evidences that point toward delinquency and to eliminate those forces before they have time or opportunity to develop. The school is a socializing agency and should provide machinery for handling unsocial conduct. The school should always have the juvenile court to fall back upon in difficult cases, but court machinery is not satisfactory as school machinery.

A far better plan for Boise would be to add to the staff an assistant nurse with the title of "visiting teacher," "home visitor," or "supervisor of attendance." We all recognize that the schools are very often so conducted as actually to stimulate delinquency. It would be the function of this office to study the school and the home conditions to the end that such forces might be eliminated. The less of the

<sup>1</sup> Boise has a "City Building Inspector" who is responsible for inspecting school buildings as well as all other types. The part-time building inspector employed by the schools supplements the city inspector's work.

police and court idea and the more of the leading, teaching, nursing idea we can get into our schools, the more positive and constructive will their program of training be.

### *7. Health Supervision Inadequate*

A fifth weakness, scarcely even now to be rated as a minor one, is the inadequate supervision of the health of the children. As will be shown later in this report, Boise has its health problems, and though the present nurse work is excellent in quality, it is far from adequate in extent.

A good solution of this problem for the present would be to make the present nurse supervisor of health and attendance, give her a full-time assistant nurse whose work it would be to visit homes where health advice is needed or where special coöperation between school and home is necessary, and who in carrying on such work would serve as attendance officer. With some clerical assistance this would give the schools much better health supervision and bring the management of attendance problems directly under the superintendent's control, where properly it belongs.

These five criticisms of the plan for administering the schools of Boise are presented, not so much because of apparent friction among the officers and teachers, as because of the general waste of energy due to misplacement of authority, with its consequent inefficiency. No evidence was found to show that the board or its committees have deliberately or carelessly infringed upon the rights of the superintendent. It is believed, however, that much of the work now done by committees would better be done by the superintendent, and the remainder by the board as a whole.

At this point it should be noted that the minutes of the board are so very brief that they reveal little of the history of the board's operations. No discussion is ever reported, however important it may have been. There is little to show the kind or extent of information placed before the board



by the superintendent,<sup>1</sup> and little to show the process by which the schools' policy is kept up to date. This is not as it should be. Such minutes need not be a stenographic report of all that is said at the meeting, but they should furnish a brief, clear report, not only of all questions handled, but of important discussions as well.

#### A RIGHT PLAN OF ORGANIZATION

The above criticisms and proposals have been made in the light of the best practice in city schools throughout the country, and they are supported quite as fully by the fundamental principles of administrative organization<sup>2</sup> wherever these apply, in business, commerce, or education. Big business has made its way by means of a highly centralized management, and, while the management of a school system may not be a case parallel in every detail with an industrial institution, wherever the essential principle of centralized control has been carefully worked out in education it has brought results.

With these facts and principles in mind the plan of organization shown in Figure 7 is suggested for the schools of Boise.

The board of trustees is elected by the people to carry out the laws and orders of the legislature and the state board of education. No board committees are provided for. The superintendent of schools is the chief executive officer of the board. It is his duty to develop an educational policy, which, when adopted by the board, he will carry out. In doing this he will be given wide freedom within the limits

<sup>1</sup> As an illustration a very full typewritten report touching a number of important problems was rendered to the board on February 8, 1919. The secretary's books show little evidence that such information and recommendations had been laid before the board.

<sup>2</sup> An abundance of facts describing present practice are so easily available that it seems unnecessary to include tables to substantiate the statements made. See a recent report by the United States Commissioner of Education: *Current Practice in City School Administration*, United States Bureau of Education Bulletin, 1917, No. 8; Cubberley, E. P., *Public School Administration*, Houghton Mifflin Company, 1916.

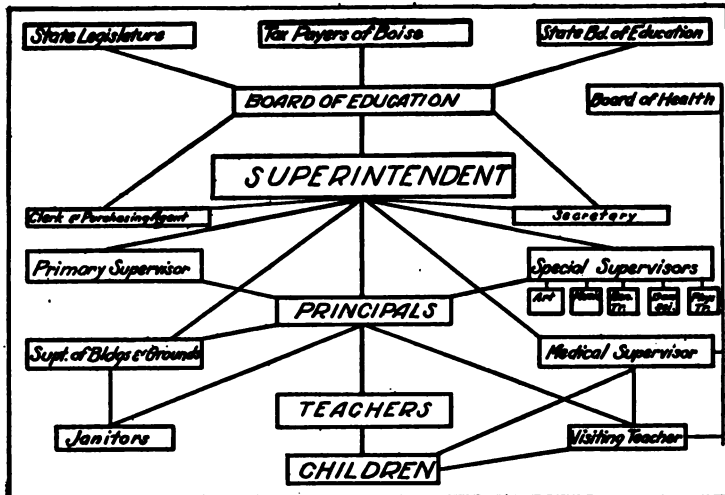


FIG. 7. DESIRABLE PLAN OF REORGANIZATION

of a carefully made budget. In terms of this policy he will choose his own staff of assistants, determine the function and salary of each, supervise the arrangement of facilities and the kinds of education to be offered, and keep his board fully advised of the progress being made. When he fails to do these things satisfactorily, the board will not take over part of his functions, but it will replace him by a man in whom the board has confidence.

At present the clerk of the board is serving, and should continue to serve, as purchasing agent, and before long must have an assistant either for bookkeeping or to serve as stock clerk and messenger. At present some temporary part-time student assistance should be provided. Aside from the severe brevity of minutes, the work of the clerk is being carried on in an orderly fashion. It is possible for any one at any time to see what becomes of the board's money, what materials are on hand, etc., by consulting his books and files.

In Figure 7 it will be noticed that a line runs from the superintendent to the clerk and purchasing agent. This line is intended to indicate that the purchasing agent is definitely subordinate to the superintendent and takes all orders and requisitions from him. As clerk he is secretary of the board. Such overlapping of duties is inevitable, and the board should carefully define all the functions and relationships here involved, not because there is a lack of harmony or coöperation at present, but as a safeguard for the future. One weakness of school organization, and hence of administration and supervision, over the country in general lies in the fact that the functions of school officers are not clearly defined, and too often they are not clearly conceived by either the board or the officers themselves.

By Figure 7 the office of building inspector — which is by no means clearly defined at present — is changed to that of superintendent of buildings and grounds. This officer should be selected by the superintendent and, in addition to the general upkeep of grounds and buildings, he should supervise the work of the janitors and, together with the principal, recommend as to their appointment and dismissal. The janitor should take orders from the principal without question, though the general management of janitor service should be in the hands of the building superintendent.

It will be noticed too that Figure 7 changes the office of school nurse to that of medical supervisor, who, through an assistant, is also to be in charge of attendance and home visiting. The lines connecting with the city board of health are intended to suggest that there should be constant and systematic coöperation with that board, and, while no place is left for contact with the juvenile court, in extreme cases the supervisor of attendance should coöperate with that court.

This plan calls for several marked changes in the present practice. It is believed to embody the best principles of organization and administration and at no point to conflict with what has found successful expression in practice.

SUMMARY AND RECOMMENDATIONS

The Boise Independent School District has been created by the state of Idaho. The trustees of this district are state officers to whom wide powers have been granted. Special attention is called to the opportunity for unhampered development and to the large responsibility which the state has thus imposed upon the trustees of the district. Something of the extent to which Boise has borne this responsibility and utilized this opportunity will appear in the following chapters.

Boise's administrative organization has been described and five important points of weakness pointed out, as follows:

1. The committee method of handling the business of the trustees is out of keeping with modern administrative theory and practice;
2. The placement of almost the entire supervision of instruction in the hands of the superintendent with one assistant, together with making all principals "head teachers" and leaving the superintendent too little time for important executive work, inevitably results in poor supervision and inadequate administration;
3. Lack of proper limitation of the duties of the building inspector, with a consequent wrong relationship between principals and janitors, creates serious trouble;
4. A wrong type of machinery for handling the problems of attendance tends to stimulate rather than to discourage delinquency;
5. Inadequate health supervision cannot but result from the present arrangement.

To correct these weak points in the system it is recommended:

1. That the rules of the board be so revised as to eliminate all standing committees, with a consequent enlargement of the executive powers of the superintendent, the introduction of a budget system of finance, and a definitely

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outlined policy touching the main problems that have constantly to be met by the superintendent;

2. That the idea of teaching principals be done away with, that the superintendent be freed from any save general supervision of all the schools, and that more special supervision be introduced;

3. That the title of building inspector be changed to that of superintendent of buildings and grounds, that he shall work under the direction of the superintendent rather than under the board or one of the board's committees, and that he shall have general supervision of all janitor service;

4. That attendance problems shall no longer be referred to the probation officer of the juvenile court, but that the school shall devise its own machinery for meeting that problem by adding an assistant, a "visiting teacher," to the office of the medical supervisor;

5. That the present nurse be made supervisor of health and attendance and be given an assistant.

With these changes it is believed that Boise would have a thoroughly modern administrative and supervisory machinery. The change would likely cost somewhat more, but it would undoubtedly result in a large increase in efficiency throughout the system.

## CHAPTER III

### THE TEACHING STAFF

(Sears)

**I**N Chapter I we have attempted to set forth the general aims and purposes of education in Boise as dictated by the essential social, economic, and intellectual forces which characterize the city. In Chapter II we have described and tried to evaluate the administrative machinery by means of which these educational aims and purposes are to be realized. Our next question is, By what kind of force is this machinery being operated?

However wisely a city may have chosen its educational aims, and however satisfactorily it may have erected the chief administrative structure of its school system, if it fails to provide a strong and progressive staff of teachers and principals through whom to work, its aims and development can never be satisfactorily realized.

#### SIZE AND DEVELOPMENT OF THE STAFF

At present Boise's staff consists of 128 supervisors and teachers, distributed through one high school and nine elementary school buildings as follows:

- 1 city superintendent of schools
- 1 primary supervisor for Grades 1 to 6
- 2 special supervisors, for art and music respectively
- 1 nurse or medical inspector
- 1 building inspector (part time)
- 1 high school principal
- 10 elementary teaching principals
- 34 high school teachers
- 74 elementary school teachers
- 2 special grade teachers
- 1 librarian

According to the rules of the board of education the superintendent "shall nominate for appointment all principals, supervisors, and teachers, and assign them to their various positions, and recommend salaries to be paid, subject to the schedule adopted. He shall also recommend the dismissal of teachers who are found to be unworthy of their positions."

In the past, reports indicate that the teachers' committee assumed much more responsibility in the development of the teaching staff than is true at present. It cannot be too strongly insisted that the board as a whole, and not one of its committees, should scrutinize the superintendent's recommendations of teachers.

### 1. *Slow Growth of Boise's Staff*

One important measure of a city's success in the development of its teaching staff is seen in the frequency with which changes take place from year to year. A decade of this feature of Boise's history is shown in Table 10, from which several interesting facts are brought out.

TABLE 10

A DECADE OF THE GROWTH OF BOISE'S TEACHING STAFF COMPARED  
WITH GROWTH IN ENROLLMENT

Year	Number Employed							Number of Changes or Additions Made							Total Average Enrollment
	Super- visors		H. S. Trs.		Grade Trs.		Total	Super- visors		H. S. Trs.		Grade Trs.		Total	
	M.	W.	M.	W.	M.	W.		M.	W.	M.	W.	M.	W.		
1900-10 .	.	1	11	10	1	69	92	.	1	5	3	.	17	26	2432
1910-11 .	.	2	13	13	1	76	105	.	1	3	5	.	25	34	3065
1911-12 .	.	5	14	13	2	84	118	.	3	4	2	1	26	36	3328
1912-13 .	.	5	14	15	2	87	123	.	.	4	4	2	31	41	2809
1913-14 .	.	5	19	18	2	87	131	.	.	6	7	1	18	32	3196
1914-15 .	.	5	17	18	2	82	124	.	1	8	2	1	7	19	3317
1915-16 .	.	4	18	17	3	78	120	.	.	2	2	2	13	19	3207
1916-17 .	.	4	17	18	3	78	120	.	1	4	7	1	14	27	3132
1917-18 .	.	3	15	19	2	80	119	.	.	6	9	1	23	30	3221
1918-19 .	.	4	12	22	2	83	123	.	1	4	12	1	28	46	3193

First, it appears that the size of the staff has just kept pace with the increase in the school population. During this decade there has been some fluctuation in the enrollment figures from year to year, but the actual increase in average school enrollment has been 25 per cent. The increase in the teaching staff has been slightly above 25 per cent.

It must not be forgotten that the modern curriculum of today requires a relatively larger teaching force than did the best curriculum of a decade ago. An increase of several per cent in Boise's teaching force as compared with increase in enrollment would therefore have occasioned no surprise. In fact, such was to have been expected.

## *2. Staff Becoming Unbalanced in Favor of High School*

The second point of interest in this table is seen in the relatively rapid growth of the high as compared with the elementary school staff. The gain for the high school is more than 38 per cent, while for the elementary school it is less than 18 per cent. These figures are significant when studied in comparison with enrollment figures. Boise's 38 per cent increase in high school staff has had to meet only a 31 per cent growth in high school student population, while her 18 per cent increase in elementary staff has had to meet a 21 per cent growth in elementary school enrollment. In other words, these figures indicate that Boise's high school policy has been one of expansion and that the opposite has been true of her elementary school policy.

## *3. Staff Should Have More Men*

A third point of interest in this table is a comparison of the number of men and women employed from year to year. For the high school the balance between men and women has been fairly satisfactory, even during the war period. The same, however, cannot be said for supervisors and elementary teachers.



At present there are but two men employed in the elementary schools, one a manual training teacher, the other a principal. The latter is resigning because the opportunity for professional growth is too slight where practically all the principal's time is devoted to teaching.

It would pay Boise well to employ at least five men for principalships and as many more as vice principals for upper-grade positions. The influence of that number of men among the children of the elementary schools of the city would be excellent. This is not to argue against the value of women principals. Everywhere women have held high rank in these positions, and the excellence of their work is acknowledged. It is a mistaken policy, however, that permits that excellence altogether to rule out the masculine influence from the younger children.

#### *4. Too Rapid Change of Staff*

A fourth point in this table, viz., to what extent is the staff changing from year to year, is more clearly shown in Figure 8, where the figures of Table 9 have been reduced to per cents. The full length of the bar represents 100 per cent of the staff for the year indicated on the left. The white portion of the bar indicates the per cent of the previous year's staff that had been retained. The remainder of the bar represents the per cent of the staff made up of new teachers. The per cent represented by the gray portion changed because of resignations, dismissals, deaths, etc., and the black portion represents the per cent of change due to increase in the size of the staff.

In 1909-10, 28.2 per cent of the teachers in Boise had never taught there before, 21.1 per cent of these new teachers came as a result of resignations, etc., while 7.1 per cent represent the increase in the size of the staff. Reading down through the diagram, it at once becomes apparent that Boise's teaching staff is rapidly becoming less stable, and a

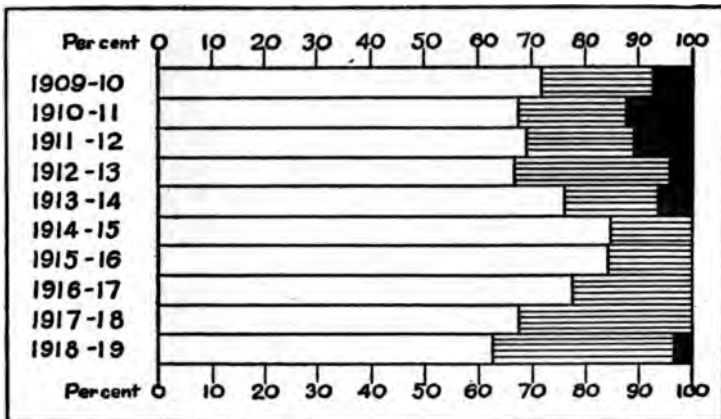


FIG. 8. SHOWING PER CENT OF CHANGES IN BOISE'S TEACHING STAFF, 1909 to 1919

White shows per cent of staff retained. Gray shows per cent of change due to resignations, dismissal, etc. Black shows per cent of change due to increase of staff.

study of the figures does not convince one that the war fully explains this tendency. Is it low salaries or unpleasant conditions of work, or is it unsuccessful teachers, that is causing this larger and larger amount of shifting in Boise's staff? Whatever its cause, it is a tendency that must not go too far. Boise is in a position to demand a fair degree of successful teaching experience as a prerequisite for candidacy to teaching positions in her schools. This diagram seems to indicate that Boise has been training an increasingly large number of teachers for positions elsewhere.

#### THE TRAINING OF BOISE'S TEACHERS

The city of Boise is not conveniently located with respect to good facilities for the training of teachers, but, being the capital and largest city of the state, and somewhat attractive for reasons of climate, it should be able to attract teachers of good training and experience. Table 11 shows in

TABLE 11

KINDS AND AMOUNT OF TRAINING RECEIVED BY THE TEACHERS OF BOISE

Kinds of Training	No. of Teachers		
	Elementary	High School	Total
High School Course Only . . . . .	6	..	6
High School plus Some Advanced Work in Normal or College or Both . . . .	17	4	22
High School plus Full Normal Course .	34	1	35
High School plus Full Normal plus Some College . . . . .	7	4	11
High School plus Some Normal plus Full College . . . . .	..	5	5
High School plus Full College Course .	16	18	34
High School plus Full Normal and Full College Courses . . . . .	2	1	3

some detail what has been the schooling of the present staff of Boise's teachers.

From this table it will be seen that 6, or about 5 per cent of the 115 teachers included in the table, have had only a high school education. Just half of the elementary teachers have had high school plus a full 2 years' course in the normal school, and 16 more have had 4 years in college in place of the normal school course. Slightly more than half of the high school teachers have had full high school and college courses.

Table 12 presents these data in terms of "years in school above elementary grade." From this it will be seen that a very large percentage of the elementary teachers have had between 5 and 6 years of training, and that between 7 and 8 years is equally popular with high school teachers. The average and median periods of training for elementary teachers are approximately 6 years, while the same figures for the high school group are not far short of 9 years. In

TABLE 12  
YEARS OF TRAINING RECEIVED BY BOISE'S TEACHERS

	No. of Teachers		
	Elementary	High School	Total
3 yr. and 1 mo. to 4 yr. . . . .	6	. .	6
4 " " 1 " " 5 " . . . . .	7	. .	7
5 " " 1 " " 6 " . . . . .	33	2	35
6 " " 1 " " 7 " . . . . .	13	2	15
7 " " 1 " " 8 " . . . . .	13	11	24
8 " " 1 " " 9 " . . . . .	2	6	8
9 " " 1 " " 10 " . . . . .	. .	7	7
10 " " 1 " " 11 " . . . . .	1	4	5
11 " " 1 " " 12 " . . . . .	. .	1	1
Average Teacher's Training . . . . .	6.3 yrs.	8.8	7.0
Median Teacher's Training . . . . .	6	8.5	7.1

1905-06 nearly 50 per cent of Boise's teachers were normal school graduates, and 25 per cent were college graduates.<sup>1</sup> The first of these figures is slightly higher, the second slightly lower, than are similar figures describing Boise's present staff. In the light of figures for other cities, however, the extent of the training of Boise's teachers is little, if any, below the average.<sup>2</sup>

### 1. *Training in Service*

An equally important question is, Do the teachers keep themselves in training? In answer to a questionnaire given out to all teachers, asking how many summer terms they had attended during the past five years, it was found that

<sup>1</sup> See Annual Report Idaho Department of Public Instruction, 1905-06.

<sup>2</sup> See Coffman, L. D., *Social Composition of the Teaching Population*, New York, 1911; also recent reports of city school surveys.

49 had attended one or more summer schools, and 15 had taken extension courses. That is, approximately one half of Boise's teachers have been carrying forward their training during their vacation time. Of these, 23 had attended but 1 summer term; 18 had attended 2; 3 had attended 3; 3 had attended 4; and 2 had attended 5.

When we consider that the state has supported a summer school at Boise for the past several years, it would seem that a larger number of teachers should have reported attendance at at least one summer term in five years. It is not unreasonable for a board of education to expect its teachers to attend summer school, to read, travel, and by other means keep up with their profession. It is not enough to enter the teaching profession with a good education: that education can be kept good only by constant study. A lawyer, a merchant, a physician who ceases to study soon loses his income. The same principle should apply to teachers.

#### EXPERIENCE AND TENURE OF BOISE'S TEACHERS

The question of whether Boise employs experienced or inexperienced teachers is well answered by the fact that:

77 of Boise's 82 elementary teachers have taught outside of Boise	
50 " " 82 " " " " " " Idaho	
28 " " 33 high school " " " " " Boise	
6 " " 33 " " " " " " Idaho	

In other words, 6 per cent of the present elementary school staff, and less than 15 per cent of the present high school staff, entered the Boise schools without previous teaching experience. This should lay no special burden upon the city, though there is no need for Boise to employ any inexperienced teachers.

Table 13 describes quite fully the kind of teaching experience Boise's teachers have received to date. The wide variety of work which this represents is undoubtedly an

TABLE 13

TEACHING EXPERIENCE OF ELEMENTARY AND HIGH SCHOOL TEACHERS  
IN BOISE

Service in	Number of Teachers		
	High School	Elementary	Total
High School Only . . . . .	12	. .	12
Principalship and High School . . . .	6	. .	6
Elementary and High School . . . . .	8	7	15
Elementary, Principalship, and High School . . . . .	3	3	6
Elementary School Only . . . . .	. .	49	49
Elementary and Principalship . . . . .	. .	11	11
Elementary and Supervisorial . . . . .	. .	3	3
Elementary and Kindergarten . . . . .	. .	4	4
Elementary and Supervisorial . . . . .	. .	3	3
Other Combinations . . . . .	4	2	2

asset which helps the schools to coördinate the work of various departments.

In length of experience Boise's teachers rank high in comparison with other cities. In a report of a government survey of the schools of Elyria, Ohio, the average teaching experience of the teachers of 26 different cities is shown. In this list there are but 8 cities where teachers on the average have taught longer than have the teachers of Boise.<sup>1</sup> The median teaching experience for the teachers of Cleveland is 10 years,<sup>2</sup> for St. Louis it is approximately 8 years,<sup>3</sup> while for Boise it is 10.3 years. One fourth of the elementary teachers of Boise have taught for 16 years or more, and one fourth have taught 5 years or less.

<sup>1</sup> *Educational Survey of Elyria, Ohio*. United States Bureau of Education, Bulletin 1918, No. 15.

<sup>2</sup> *Cleveland Education Survey*, "The Teaching Staff," Walter A. Jessup. Cleveland Foundation, 1916.

<sup>3</sup> *Survey of the St. Louis Public Schools*, Part I; Charles H. Judd. World Book Company, 1918.

For the high school group the amount of teaching experience is from 3 to 29 years, almost exactly the range for elementary teachers, but with an average of only 8.5 years, or nearly 2 years less than the average for elementary teachers.

The average teaching experience of Boise's teachers may be raised somewhat by the fact that principals are included. The principals are practically full-time teachers, however; so they should be included.

If a teaching staff is young and inexperienced, the city has a serious task of supervising and training. If the staff is relatively old, and has had long experience, it is likely to mean that new ideas are not filtering into the system as rapidly as they should and that conservatism will dominate. On the average, Boise might wish for slightly less rather than more teaching experience for her teachers.

#### THE AGES OF BOISE'S TEACHERS

Boise's teachers range in ages from 22 to 56 years. The average for the 63 elementary teachers and principals reporting this item is 34.4 years, while the average for 33 high school teachers is 32.6 years. The middle 50 per cent of elementary teachers are from 29 to 37 years old, and the same figures for the high school group are 30 to 34. While Boise has no teachers who should be retired on account of age, yet, according to the extensive study by Coffman, above cited, these ages are relatively high.

These figures are of great importance to Boise in view of the provision the district has made for retirement, old-age insurance, and disability funds for the care of its teachers. A recent state enactment makes it possible for an independent district employing 30 or more teachers to create a Teachers' Retirement Fund from which may be paid \$40 per month to any male teacher sixty years of age and to any female teacher 55 years of age. Men who have taught for 35 years, 15 of which have been in the schools of Boise,

and women who have taught 30 years, 15 of which have been in Boise, are eligible to receive such income. The fund is also available for old-age insurance and for providing income in case of permanent disability. In terms of this law, Boise has made wise and generous provision for its teachers.

*1. Bearing of Age Statistics upon Administration of  
Boise's Insurance and Disability Funds*

In carrying out this law it is obviously to Boise's advantage to employ teachers who still have before them a large expectancy of service. In doing this there are two dangers which the city should carefully avoid. One is the danger of adding to the staff new teachers who are well along in years and will soon become pensioners; the other is that of employing teachers who are so very young in years and experience that they do not enter the service with proper equipment. Teachers who are very young and inexperienced and teachers who have had more than ten or twelve years of teaching experience are equally poor risks from the standpoint of the service they will render in the classroom. One is apt to be untrained but will have enthusiasm and capacity to learn; the other has the knowledge and skill but is apt very soon to become over-conservative. The younger teacher is a far better risk from the standpoint of insurance but not for immediate service; the older teacher is better from the standpoint of immediate service but a poor insurance risk. When a teacher is employed, she becomes an asset to the city to the extent of the number of years' service she has yet before her, and a liability to the extent, not of her present salary, but of all her future salaries plus the insurance and pension cost. The insurance and pension parts of the liability become relatively large as ages are relatively high. Since Boise's age line is high at present, care in the selection of teachers should be exercised, and a careful study made of what sort of financial burden each average year of age added to the staff will mean to the city.



**SOCIAL COMPOSITION OF BOISE'S TEACHING STAFF**

It is important to know what kind of teachers one is employing, not only from the standpoint of training and experience, but also from the standpoint of race and place of birth. A teacher's personality is not all made up in school. It is in very large part the product of home and community life outside of school. If we wish to know what ideas, traditions, and social viewpoints are to determine the general atmosphere and methods of the classrooms, we must ask where the teachers are from. If all the teachers had been reared in Boise and were of Boise parentage, and in addition had had all their training in Boise, we could confidently expect that the outcome of such a system of inbreeding would be harmful. Each generation would become more and more provincial and the city more and more isolated. Such an extreme situation is not possible in Boise, since the city offers no teachers' training facilities.

These facts are shown clearly in Table 14.

First of all, it is clear that American traditions dominate the Boise schools. Secondly, it is especially noticeable that Idaho traditions alone do not, there being practically no parents, and only 13, or less than 12 per cent of the teachers, who were born in the state. Certainly it cannot be said that Boise employs too much home talent. It is interesting that the Pacific Coast states contribute less than do the New England states, and that the largest percentage of the staff are from the North Central states. More of the present staff are from Iowa than from Idaho; Kansas, Nebraska, Illinois, and New York also are well represented.

If these figures are typical for other cities and towns in the state, they may suggest that Idaho should try to speed up the development of her institutions of higher learning. For the city they surely guarantee against any sort of educational tendency toward provincialism. Unquestionably, they indicate a wide variety in training as well as in social traditions. For an inland city there can be no better

TABLE 14

BIRTHPLACE OF BOISE'S TEACHERS AND OF THE PARENTS OF BOISE'S  
TEACHERS

Place of Birth of Teachers and Their Parents	Fathers	Mothers	Teachers
United States . . . . .	88	94	110
Idaho . . . . .	.	1	13
New England . . . . .	4	7	5
Middle Atlantic . . . . .	18	13	7
East North Central . . . . .	36	34	20
West North Central . . . . .	14	24	42
South Atlantic . . . . .	5	3	2
East South Central . . . . .	4	. .	. .
West South Central . . . . .	. .	. .	1
Mountain . . . . .	. .	1	19
Pacific . . . . .	1	3	5
Europe . . . . .	20	19	4
Canada . . . . .	6	3	. .
Per cent from U. S. . . . .	77.2	81.0	96.5
“ “ “ Europe . . . . .	17.5	16.4	3.5
“ “ “ Canada . . . . .	5.3	2.6	0.0

guarantee against isolation than to have a school staff so selected, providing too large a percentage of the staff is not changed each year.

#### BOISE'S SALARY SCHEDULE

The final test of a city's ability to choose its own teachers freely is its capacity to compete in the open market. Climate and social opportunity may attract, but they will have little holding power against greater financial returns elsewhere. It is the business of the superintendent to run the schools with as few teachers as is compatible with the best methods for training the city's children, and to employ his teachers at the least possible cost to the city. First, it must be de-

cided what kind of schools are wanted. An old-fashioned curriculum requires fewer teachers than are necessary for handling a modern curriculum. This is true not only because there are fewer and more formal studies in the old curriculum, but also because the more formal the work the more pupils a teacher can manage.

### *1. Basis for Determining Salary Schedule*

Before examining Boise's salary schedule, therefore, we should ask how large a teaching force and how large a salary budget the city should have. The size of the staff will depend largely upon the number of pupils to be taught. At present Boise employs 119 teachers, exclusive of supervisors, and has an average enrollment of 3193, or slightly better than one teacher for each 28 pupils enrolled.

Since the schools have been sadly disturbed by war and epidemics during the last year or two, it is thought that figures for 1915-16, as published by the United States Commissioner of Education, will be a better basis for the study of this question. From this source, therefore, Table 15 has been worked out to show the standards for western cities with which Boise can properly be compared.

From this table it appears that Boise occupies a median position until column 3 in the table is examined. Among these 15 western cities the range is from an average of 23.7 to 31.6 pupils per teacher. Boise, with 25.8 pupils per teacher, occupies a position somewhat better than that of the average for the group of cities. In pupils per supervisor Boise occupies a slightly more favorable position in the table, being fourth in the group of 15 cities. When it comes to principals, however, Boise, together with Salem and Stockton, is at the bottom of the list. A careful study of this table shows that Boise, on the whole, occupies a position far below the average.

It will be recalled from Table 8 that Boise's tax rate is relatively low, and therefore that the city is not compelled to

TABLE 15

NUMBER OF PUPILS IN AVERAGE DAILY ATTENDANCE PER TEACHER, PER SUPERVISOR, AND PER PRINCIPAL, IN SCHOOLS OF WESTERN CITIES

City	Pupils per		
	Teacher	Supervisor	Principal
Salem, Oregon . . . . .	23.7	2610.0	no principal
Tulsa, Oklahoma . . . . .	24.4	630.1	420.0
Sioux Falls, South Dakota . . . . .	24.5	406.4	316.1
Leavenworth, Kansas . . . . .	24.5	594.0	792.0
North Yakima, Washington . . . . .	24.7	661.2	440.8
Riverside, California . . . . .	24.9	1509.5	1509.5
Alameda, California . . . . .	25.0	368.4	526.2
<b>BOISE, IDAHO</b> . . . . .	<b>25.8</b>	<b>511.3</b>	<b>no principal</b>
Trinidad, Colorado . . . . .	26.5	411.8	344.8
Phoenix, Arizona . . . . .	27.0	1323.0	1323.0
Bellingham, Washington . . . . .	27.4	612.0	333.8
Everett, Washington . . . . .	27.8	1070.5	713.6
Great Falls, Montana . . . . .	28.0	561.5	842.2
Stockton, California . . . . .	28.3	1176.7	no principal
Walla Walla, Washington . . . . .	31.6	664.7	531.8
Average of cities . . . . .	26.3	874.0	674.4

occupy such a position among cities of her own class. It was pointed out above that Boise's staff had barely kept pace with the city's growth in population. To occupy the best position in this table Boise should have at least 129 teachers, 7 supervisors, and 9 principals, instead of 119 teachers, 6 supervisors, and no principals, as reported by the United States Commissioner of Education.<sup>1</sup>

To add to Boise's unfavorable position, it must be pointed out that the city has no ungraded rooms. This means that all pupils, however difficult to classify, must be taught in reg-

<sup>1</sup> Boise has 10 elementary school buildings, in each of which there is a head teacher who is designated as principal. The title is mainly an empty one, as the principal has practically no time for supervision.

ular classes. This is a wasteful method, particularly in the larger schools. Further, Boise has all her manual training work for the grades done in one building by one teacher, and the work in physical education and directed play in the elementary schools is not adequately provided for.

## 2. *Boise's Present Salary Expenditures*

What Boise is now expending for teachers' salaries is clearly shown in Figure 9. Salaries of elementary teachers — including principals — range from \$600 to \$1900, while in the high school the range is from \$1100 to \$2200. The median and average salaries for elementary teachers are \$980 and \$1013 respectively, while similar figures for high school teachers are \$1250 and \$1360.

In evaluating these salaries it is worth while to consider certain facts gathered by Dr. George D. Strayer, President of the National Education Association, who sent out a questionnaire to the teachers of the country, asking, among other things, for a statement of the "Annual amount spent for personal living expenses: room rent, board, clothes, car fare, medical attention, etc.," and the "Annual amount spent for recreation, books, magazines, travel, professional advancement, etc.," for the year 1917-18, and the estimate of the same expenses for the year 1918-19. Without giving

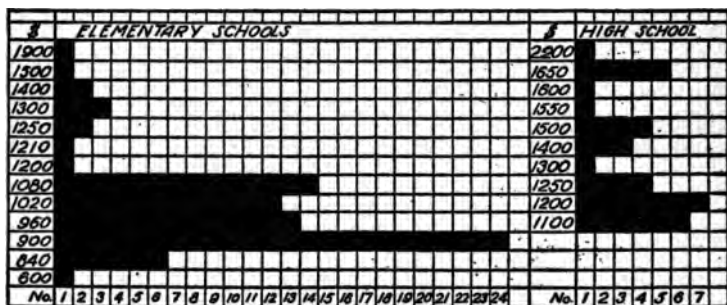


FIG. 9. DISTRIBUTION OF TEACHERS' SALARIES IN BOISE, 1918-19

the details of the answers given by the teachers of Boise, it is enough to say that the median amount spent for living expenses in 1917-18 — men high school teachers excepted — was \$750; and for recreation, professional advancement, etc., the median amount was \$125 for elementary teachers and \$225 for all high school teachers.<sup>1</sup> The figures estimating similar costs for 1918-19 were in nearly every case higher.

Surely all will agree that the amount devoted to recreation and professional development is not too high if the teachers are expected to keep abreast of the times. If from the median elementary teacher's salary of \$980, \$750 is spent for living, and \$125 for recreation, etc., the teacher has very little left as insurance against old age and disability. In fact, society cannot wisely afford to have its teachers operating on such a narrow financial margin.

### *3. Salaries and the Rising Cost of Living*

Figure 9 shows how Boise's salary schedule has been raised to offset the rising cost of living during the last three years. The disappearance of the very low salaries is offset by an increase in the number of higher salaries. This increase is well stated in terms of median and average salaries, as shown in Table 16.

From this table and from Figure 10 it appears that Boise has tried to meet the increased salary demands that have so rapidly forced themselves upon us since the beginning of the war. Whether Boise has done enough in this line it is difficult to say. After a somewhat thorough study of teachers' salaries and costs of living in Idaho, Dr. E. A. Bryan, State Commissioner of Education, makes the statement that for the year 1917-18 the increase in salaries amounted to 6%, while the increase in cost of living was 17%. Of the 72 teachers on Boise's 1917 staff who were retained, 52 received salary increases ranging from \$45 to

<sup>1</sup> Thanks are due Superintendent C. E. Rose for the use of these figures.

TABLE 16  
SHOWING INCREASE IN MEDIAN AND AVERAGE SALARIES IN BOISE,  
1916 TO 1919

Class of Teachers	1917		1918		1919	
	Med.	Ave.	Med.	Ave.	Med.	Ave.
High School . . . . .	\$1000	\$1096	\$1200	\$1233	\$1250	\$1366
Elementary School . . . .	870	856	885	907	980	1013

\$325 and averaging \$82.94 each; while 20 received no increase at all. For the entire 72 teachers this meant slightly less than a 7% increase. For the 52 whose salaries were raised it meant an increase of 10.4%. Even assuming that Dr. Bryan's figures describing increase in cost of living are too conservative, as, offhand, most people would think, Boise has still fallen far short of her obligation to her teachers.

#### *4. Boise's Salaries Compared with Those of Other Cities*

What Boise has done in comparison with other western cities is a further basis for judging the adequacy of her salary schedule. This is brought out clearly in Table 17, which shows the maximum and minimum salaries of elementary and high school teachers and principals and of superintendents for 15 western cities, together with the per cent of increase in these salaries during the last four years.

This table shows that the range of minimum salaries for elementary teachers is from \$700 to \$1200, with \$945 as the average. The maximum salaries for elementary teachers

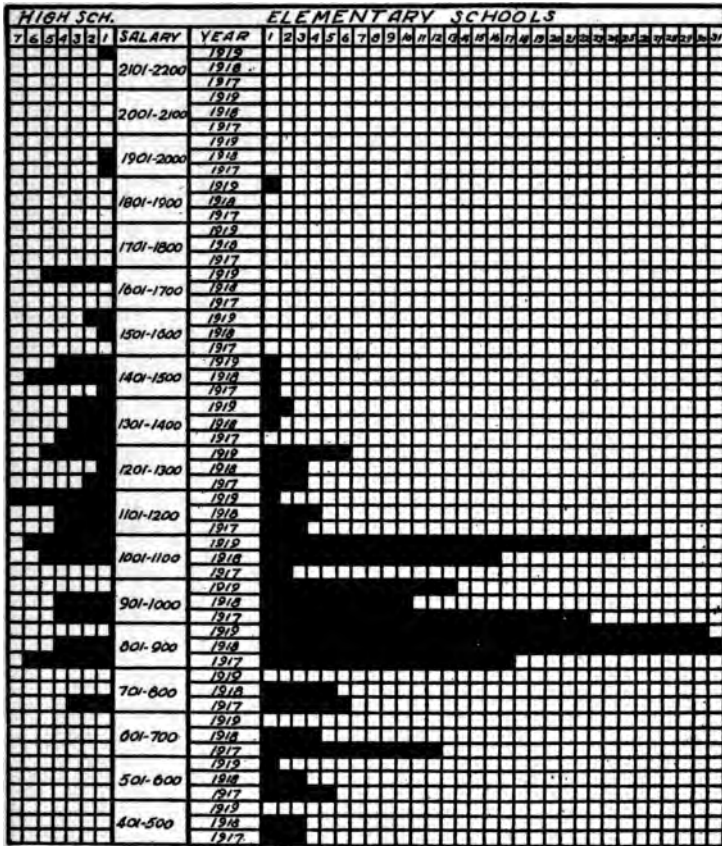


FIG. 10. DISTRIBUTION OF ELEMENTARY AND HIGH SCHOOL SALARIES IN BOISE FOR THE PAST THREE YEARS

range from \$1025 to \$1500, with \$1249 as an average. For high school teachers the range in minimum salaries is from \$1000 to \$1560, with \$1196 as an average; while in maximum salaries the range is from \$1200 to \$1920, with \$1590 as the average.

In all teachers' salaries Boise stands above the average



for these 15 cities.<sup>1</sup> A similar examination of the figures showing principals' salaries shows that Boise is well above the average for high school principals but below the average for grade principals. For superintendents Boise's salary is also above the average for the group of cities from which figures could be obtained.

As compared with other cities, therefore, it must be said that Boise occupies a fairly favorable position when we consider the salaries to be paid in 1919-20. When we study the other columns in the table, however, we see that Boise has not kept pace with the average city in the per cent of increase granted during the last four years. Boise has granted substantial increases, however, so that at present we may say that, in the light of present-day standards, Boise's salary schedule is fully adequate.

In the light of the several arguments here presented, and of all our facts taken together, however, we would urge Boise to assume a larger place of leadership among western cities in this very important matter. We cannot demand that teachers keep up in their profession unless we offer them reasonable financial returns. In offering to their teachers a bonus of \$60 to \$100 for successful work done at summer schools, Boise has taken a commendable step forward. With such rewards and with adequate salaries, Boise should be able to choose her teachers from where she will, and besides, she will stimulate other cities to put their schools on a sound financial basis.

#### SUMMARY AND RECOMMENDATIONS

In respect to Boise's teaching staff the following points are of interest, and many of them deserve careful study by the city's school authorities:

1. Authority for the nomination of teachers in Boise is very properly vested in the superintendent of schools.
2. The size of Boise's teaching staff has for the past decade barely kept pace with the increase in school popu-

<sup>1</sup> See also Boise's place among cities of the same population.

TABLE 17

COMPARATIVE SALARY SCHEDULES IN WESTERN CITIES FOR YEAR 1919-20,  
SHOWING PER CENT INCREASE IN LAST FOUR YEARS<sup>1</sup>

City	Teachers				Principals				Superintendent	
	Min.	Max.	Per Cent Increase in Last 4 Years		Min.	Max.	Per Cent Increase in Last 4 Years		Salary	Per Cent Increase in 4 Years
			Min.	Max.			Min.	Max.		
Elementary Schools										
Reno, Nev. . . . .	\$900	\$1200	16.6	33.3	\$1300	\$1500	30.0	15.3	\$4000	21.2
Albuquerque, N. Mex. . . . .	1200	1400	43.3	47.3	2400	2400	..	47.9	3750	92.0
Cheyenne, Wyo. . . . .	960	1260	28.0	34.7	1500	1500	25.0	25.0	2800	0.0
Everett, Wash. . . . .	840	1290	40.0	30.3	1500	2160	13.6	10.1	3500	12.5 (decrease)
Fargo, N. Dak. . . . .	900	1025	28.5	13.7	1140	1650	14.9	12.1	4500	25.0
Great Falls, Mont. <sup>2</sup> . . . . .	900	1400	7.1	22.8	..	1900	..	..	3100	5.0
Trinidad, Colo. . . . .	855	1202	42.5	41.4	1500	1750	66.6	29.6	3000	20.0
Bellingham, Wash. . . . .	840	1260	40.0	32.6	1230	1770	11.8	10.6	3400	6.2
Pocatello, Idaho . . . . .	1000	1150	38.8	59.7	1600	1600	33.3	33.3	..	..
Blackfoot, Idaho . . . . .	1000	1200	53.8	50.0	..	..	..	..	..	..
Nampa, Idaho . . . . .	1100	1300	60.8	71.9	..	..	..	..	..	..
Walla Walla, Wash. . . . .	850	1150	13.3	22.8	..	..	..	..	..	..
Stockton, Calif. . . . .	1140	1500	31.5	20.0	1500	2100	15.3	11.4	3000	00.0
Sioux Falls, S. Dak. . . . .	700	1100	14.3	27.2	1500	1500	33.3	13.3	4000	12.5
BOISE, IDAHO . . . . .	1000	1300	22.0	26.1	1450	1600	22.1	28.0	3700	11.2
Average . . . . .	945	1249	32.0	35.5	1428	1785	26.6	22.0	3522	19.3
High Schools										
Reno, Nev. . . . .	1200	1500	20.0	15.4	(2600)	(8.3)				
Cheyenne, Wyo. . . . .	1140	1440	21.9	36.4	(2000)	(23.4)				
Albuquerque, N. Mex. . . . .	1320	1500	52.5	38.8	(2800)	(80.6)				
Everett, Wash. . . . .	1020	1500	27.5	25.0	(2600)	(7.1)				
Fargo, N. Dak. . . . .	1000	1600	11.1	14.3	(2650)	(20.5)				
Great Falls, Mont. . . . .	1100	1900	16.6	18.7	(3120)	(24.8)				
Trinidad, Colo. . . . .	1000	1750	25.0	45.8	(2100) <sup>3</sup>	(16.6)				
Bellingham, Wash. . . . .	1140	1440	26.6	15.2	1860   2400	16.2   00.0				
Pocatello, Idaho . . . . .	(1200)	(20.0)			(2200)	(22.2)				
Blackfoot, Idaho . . . . .	1300	1500	73.3	76.4	..	..				
Nampa, Idaho . . . . .	1250	1450	35.9	45.5	..	..				
Walla Walla, Wash. . . . .	1200	1500	33.3	44.0	(3200)	(23.1)				
Stockton, Calif. . . . .	1560	1920	30.0	23.1	(2700) <sup>3</sup>	(No raise in 3 years)				
Sioux Falls, S. Dak. . . . .	1200	1800	33.3	50.0	(3000)	(16.1)				
BOISE, IDAHO . . . . .	1300	1850	23.0	21.6	(2800)	(10.7)				
Average . . . . .	1196	1590	29.9	32.6	2654	23.0 <sup>3</sup>				

<sup>1</sup> Thanks are due the superintendents of schools in the following cities for the facts here presented.

<sup>2</sup> Figures for 1918-19.

<sup>3</sup> Bellingham and Stockton not included.

lation. Its growth has not been as great as is demanded for the handling of a modern curriculum. These statements apply much more particularly to the elementary than to the high school.

3. While the high school has continued to employ a fair percentage of men teachers, there have been, and still are, practically no men in the elementary schools. To give a proper sex balance to Boise's teaching staff, there should be at least five men principals and as many more men vice-principals.

4. There is a tendency in recent years toward an increasing number of changes in Boise's teaching staff. This is a tendency that can easily go too far, if it has not already done so.

5. Boise is without facilities for training her own teachers and so must give special thought to the training of teachers while in service. The summer school, reading-circle work, occasional professional lectures, conventions, and teachers' meetings should be liberally drawn upon for such training.

6. As compared with other cities, Boise's staff has about an average amount of training. About one fourth of the grade teachers are under-trained.

7. Boise employs few inexperienced teachers, and should not have to employ any.

8. The length of teaching experience for Boise's teachers is greater on the average than is common in other cities. This is a point to be watched in developing a staff.

9. Boise's teachers average somewhat older than is common in other cities. This should be carefully guarded against in all new appointments, not only because of the increased insurance and pension liabilities which it creates, but because it does not mean the best service.

10. From the standpoint of race and birthplace Boise's teachers are a very cosmopolitan group. This is an asset if the staff does not change too rapidly.

11. Boise is not maintaining as large a teaching staff in proportion to pupil population as is common in other western

cities. Ten to fifteen teachers and principals added to the present staff would not place Boise ahead of the best cities in this respect.

12. Boise's salaries are much too low when judged in the light of the present cost of living. When judged by salaries paid in other cities, Boise's salaries are up to standard, though they are not among the highest.

## CHAPTER IV

### THE CURRICULUM

(Sears)

#### EXTENT OF BOISE'S EDUCATIONAL PROGRAM

**T**HE Child Labor Act of Idaho provides ample protection for children under 14 years of age, and up to 16 years of age for those who have not learned to read and write the English language, and who have not received instruction in spelling, English grammar, geography, and arithmetic. The State's Compulsory Education Act applies to all children between the ages of 8 and 18 years who have not completed the 8th school grade. The Boise Independent School District utilizes the juvenile court machinery for carrying out the provisions of these laws, in so far as the teachers are responsible for their execution.

These laws are designed not merely to protect the physical well-being of the state's children, but also to provide a time for instruction and training. The Boise Independent School District has taken over from the state the task of training all the children within the jurisdiction of the district, and has provided the necessary equipment for giving every child a minimum of 12 years of instruction, beginning normally with the age of 6 years and ending with the age of 18 years.

During this period of 12 years the Boise schools are offering what is commonly offered in the elementary and secondary schools over the country. No attempt is made to offer kindergarten or junior college training, though it is possible for high school students to carry on some post-graduate study if they wish. There may be no pressing demand for kindergartens in most parts of the city, but, as will be shown elsewhere in this report, there are many and

important reasons why a substantial junior college should be developed at Boise.

#### WHAT A CURRICULUM IS

Just what the program of training for Boise, or for any given city, should include is most difficult to say. To decide upon the content of a curriculum is to give practical expression to our conception of "what education means," "what studies are of most worth," "the relation of learning to citizenship," and many other questions which have puzzled philosophers as far back as Plato and Confucius.

Without attempting a concise philosophical definition of what a curriculum is, it is believed that the following statements express the best thought on the subject at the present time:

1. A curriculum is a body of information and exercises (physical, social, æsthetic, moral, intellectual, etc.) to be utilized in the training of children.
2. The materials and exercises so used are chosen from among the facts and processes known to have value to society. (Society is composed of children as well as adults.)
3. There is vastly more useful information and there are vastly more useful activities available for curriculum purposes than can be used. Hence the necessity for selecting.
4. Each bit of information and each exercise should be selected for a certain desirable and well-defined purpose, which purpose will be better served by that information or exercise than by any other.
5. Information and exercises must be well balanced with respect to the essential recognized intellectual, moral, political, occupational, æsthetic, and physical values in life. In other words, the curriculum must not be one-sided.

It will be noticed that such a curriculum calls for action as well as for knowledge. We are now recognizing that the past has over-emphasized the factual or bookish type of training and under-emphasized the physical and social types. The present conception of education calls for a reinstatement in the curriculum of the "do" side of life.

The test of good subject matter today is social utility, — social, not in a narrow but in a broad sense. Personal cleanliness is as much a social as it is an individual virtue. Society wants its members to be physically strong and economically competent. It also wants each to make whatever intellectual or social contribution possible. A successful group is made up of successful individuals, and for the schools the so-called conflict between the individual and the social is entirely without point.

The necessity for selecting from the many socially useful facts and processes is ever present, because as time passes invention and discovery cause the development of new needs, hence new values arise. It is the function of the school to detect these new values and to find a place for them in the curriculum. The war has called for a more thorough understanding of citizenship. It has insisted that we mean something definite when we say "My country." Our present task, then, is to work over our subject matter on civics and history with a view to giving place to these new values. This merely illustrates how the school must keep up a selecting and sorting-out process if it is to have a modern curriculum.

In making a curriculum, e. g., in selecting subject matter, nothing is more important than that we should have a clear aim. The modern sciences of psychology and sociology have shaken down some of the older aims, as "mental discipline," "breaking the will," "training the senses," etc., and given us a clearer understanding of the laws of learning, and of educational values. This new knowledge applied to education makes it possible for us to answer society's urgent demand that the school shall meet the specific definable needs of the times.

Our fifth point calls for a many-sided curriculum. The traditional school exercised the child's memory, but seldom his hands, his eyes, or his reason. It taught him wise sayings, but little about how to manage his own or his community's affairs. The modern curriculum must be expanded

to the end that the child may learn something of all the aspects of his present and future life among his fellows.

In Chapter I we have presented a brief discussion of the many aspects of life in Boise, which are involved in the making of the city's school policy and from which this curriculum material must in a measure be drawn, and there we suggested certain problems which the curriculum must face. Here let us repeat that the whole life of Boise, — its occupations, its social life, its political life, its intellectual life, — all are to be kept in mind as rich sources from which the materials of the curriculum are to be brought together. Furthermore, the institutional life of Boise must become a real laboratory for the schools. The state capitol, the city hall, and the courtrooms of Boise can and should be utilized in the teaching of civics. The city health department should be drawn upon in the teaching of hygiene, etc.

#### THE ELEMENTARY SCHOOL CURRICULUM IN BOISE <sup>1</sup>

With these principles in mind, let us enumerate the subjects taught in Boise's elementary schools and later examine the content of those subjects. In the first grade we find reading, language, hygiene, phonics, nature study, music, art, and physical education. In Grade 2 are added arithmetic and spelling. In Grade 3 one school offers work in mechanical arts in addition to the studies offered in Grades 1 and 2. Grade 4 adds history and geography and drops phonics. Grade 5 adds manual training and domestic science. These studies continue through Grade 6 and to the middle of Grade 7, when geography is dropped. Grade 8 drops reading and spelling and in the middle of the year domestic science and manual training, and adds general science and algebra.

This entire offering of the elementary schools is made clear by Figure 11, which shows all that a child may study in each of the grades. There is some slight variation from this in a few schools.

<sup>1</sup> For discussion of the high school curriculum, see pages 229-237.



SUBJECT:	GRADE	I	II	III	IV	V	VI	VII	VIII
READING									
PHONICS									
HANDWRITING									
ARITHMETIC									
SPELLING									
GRAMMAR									
LANGUAGE									
GEOGRAPHY									
HISTORY, CIVICS									
PHYSIOLOGY									
MANUAL TRAINING									
DOMESTIC SCIENCE									
NATURE STUDY									
MUSIC									
ART									
PHYSICAL TRAINING									
GENERAL SCIENCE									
ALGEBRA									

FIG. 11. BOISE'S ELEMENTARY SCHOOL CURRICULUM BY GRADES

Only five of the nine elementary schools offer the entire eight years' work. One school offers but five years' and three schools but six years' work. All the manual training and domestic science that is taught is taught in the Central School. It is with some slight inconvenience, therefore, that all the studies suggested in Figure 11 are available for all the children of the district.

In kinds of training offered, then, we may say that all the traditional subjects are well represented, while art, music, domestic science, manual training, and nature study add the newer content. To the customary courses Boise has added algebra and general science. Whether these were intended primarily as introductory high school subjects or not, that would seem to be the only service that algebra could render. As is shown elsewhere, a large percentage of Boise's pupils enter high school, though large numbers of these drop out at the end of one year. In other words, Boise is no exception to the rule that upper-grade children need studies that will introduce them to life as well as to high school and later to college. Algebra has little value for the

boy who goes no more than one year to high school. It does not equip him for a professional career nor does it for a career in a trade. It is therefore fair to say that Boise should offer several prevocational courses to meet the more pressing needs of children who are about to end their formal schooling. It is believed that a broad knowledge of our great industries, skill in mechanical construction, tool processes and technique, mechanical drawing, etc., would make a greater contribution, if properly taught, than would algebra. General science would be in line with this group of suggested subjects and so is a commendable part of the present offering.

Perhaps until Boise's buildings are better adapted to a real intermediate school or junior high school plan of organization the expense of putting in shop courses might be large. With the new building now being erected it would seem possible to work out such a plan. If all or most of the 1000 children of Grades 7, 8, and 9 could be put into one building, then a widely varied curriculum such as would mark a great advance in the city's schools could be offered. Some modification of a few of the old buildings might be necessary, but the commission fails to discover any permanent or even serious present difficulties in the way of such a program.

#### WHAT A PRINTED COURSE OF STUDY SHOULD CONTAIN

A printed or typewritten course of study is primarily a handbook for teachers and school officers. Its function is to systematize and coördinate the work of the schools. This can be done only when each teacher knows the part she is to play in the sum total of the school's program. The outline must therefore give her not only the general plan of her own work but the place of that work in the larger plan as well. If she is teaching 5th grade reading, she should know what the schools propose to accomplish not by the 5th grade reading alone, but by the entire course of 8 years as well.

What has been accomplished, what is yet to be done, what am I to do, are questions which the printed outline must answer for her.

To be useful, a printed course of study should contain the following materials:

1. A brief, clear statement of the aim of each study and of the specific aim of each year's work in that study. The language used should not be so general as to be useless. To say that the aim of teaching reading is *ability to read readily* is entirely worthless unless there is an understanding of what "read readily" means.

2. A brief outline of the subject matter and exercises to be covered by years or terms. There should be many suggestions as to how to supplement the texts and manuals to be used.

3. A statement (quantitative where possible) of the work to be accomplished, not only in amount of ground to be covered, but of the quality of work as well, — not only how much matter is to be read but the rate of reading, the ability to get the thought from the printed page, etc. In this particular subject the Thorndike, Gray, and other standard tests make possible a very clear statement of what is to be accomplished.

4. A statement of the amount of time that should normally be devoted to the study and recitation of each subject.

5. Innumerable brief suggestions as to the manipulation of materials, the use of devices, and the management of the class in study and recitation.

The outlines should be brief and written in simple language, and above all, they should be in constant use by teachers.

#### BOISE'S OUTLINE OF COURSES

Boise does not have a printed course of study (a high school course is in preparation) but uses mimeographed sheets which each teacher may place together in a loose-leaf folder. In some respects these outlines meet the standards just suggested. The outline for reading states the aims, means, and ends of the course, and quotes the Starch, Gray, and Curtis standards for rate of reading. At many points, however, the aims of courses are not stated, or are stated in a vague, general way. In many cases helpful suggestions are wanting, the outline of subject matter is inadequate or

similar to the textbook, and too little supplementary material is suggested.

### *1. The English Courses*

As will be shown later, Boise devotes more than two fifths of the time of the elementary schools to the study of English. Phonics, reading, spelling, writing, language, and grammar are the subjects taught: phonics in the first four grades, reading in the first seven, spelling in the second to eighth inclusive, grammar in the seventh, and language in all grades. The outlines for phonics and reading are brief, but the plan and suggestions are good. The amount of reading material seems rather more limited and somewhat less varied than it should be, particularly for the upper grades. The work outlined for spelling is excellent, except that very much more emphasis is placed upon the use of rules in spelling than is warranted. Recent investigations indicate that most of the time put on spelling rules is lost so far as training in spelling is concerned. The course outlined shows that attention has been given to most of the late investigations in this field. It is the writer's opinion that spelling could be dealt with much less formally in the seventh and eighth grades, though in this some difference of opinion exists. The work in language and literature suggests plenty to do, but offers altogether too little help as to how to do it. It also stresses the formal aspects of oral and written language. Language is rarely the most successful part of a curriculum. It is so easy to talk commas, quotation marks, capitals, paragraph form, etc., that we often understress easy, natural expression. An expert teacher could follow Boise's outline and do good work, but an inexperienced teacher would surely teach too much form.

### *2. The Sciences*

Nature study is taught in the first four grades, geography in Grades 4 to 7B inclusive, physiology and hygiene in all grades, and general science in Grade 8. The subjects cover

the usual materials and in the order followed in most modern school systems.

In the early grades the natural phenomena close at hand are utilized quite effectively; weather observations are made and recorded, the sun, the moon, star groups, winds, and storms are studied, as are streams, land and water forms, and the plant and animal life of the community. The materials and exercises outlined for nature-study work are especially good. Again, however, there is a lack of helpful, stimulating suggestions to teachers as to how best to utilize the many facts and observations suggested. The geography material outlined is available in any good text on the subject, and aside from an occasional reference to local situations one wonders why a text would need to be supplemented by such an outline. To be useful it should suggest the use of many books, maps, pictures, advertising materials put out by railroads and industrial firms, etc., which are not mentioned in the text. It should suggest many devices, plans for field study, home observations, etc. It is that sort of material that supplements and enriches the ordinary textbook.

The outline for physiology and hygiene as a manual of directions is wholly inadequate. Many excellent things are suggested, however, as will be shown in a later chapter, and there is reason to think that the work in the schools is of a good grade. Specially noteworthy is the work suggested for the establishment of right habits of living. Clean teeth, care of eyes, and ventilation are emphasized, and on the social side equal effort is made to teach the importance of clean streets, proper disposal of garbage, safeguards against epidemics, etc. Teachers cannot too often be reminded that the principle "learn to do by doing" applies nowhere more fully than in the teaching of hygiene and civics, two subjects intimately related at many points. Bacteriology is a large word for small children, but no study offers a more satisfactory source for hygiene material that is wonderful and also practical in its bearing upon health.

### *3. Manual Training and Domestic Science*

Manual training and domestic science are taught in Grades 5 to 8B inclusive. The outlines for this work are very inadequate. In fact, they meet practically none of the standards we have set above for printed courses of study. A bare topical outline is of use, but it is not enough. These subjects are of the very greatest importance in the elementary training of children and, being new, they should be fully outlined and every possible help given for their handling in the classroom.

### *4. History and Civics*

History and civics are taught in all grades except 7A. The work is very informal and incidental in the first years: the celebration of holidays, stories and poems of primitive life in America, stories of heroes of ancient times, and myths and legends touching all civilizations the world over. Grade 6B emphasizes Greek and Roman history and 6A the coming of European peoples to America. Grades 7B and 8 are devoted to American history and civics. The course as outlined has much to commend it. While the outlines are not equally well developed for the different grades, it is clear that the aim of history teaching in Boise is to give the child a sense of the past and how that past has gradually built up the present. The pupil will see the peoples at work in their homes, occupations, schools, and churches, as well as at war, and will know something of local history, which is properly emphasized. Many of our best schools are utilizing the present industrial life to a larger extent in the beginning years than is done at Boise, and that is the writer's preference. The course as outlined, however, is commendable. The work in civics is also well planned. The formal aspects stand out rather clearly, but suggestions for their proper use by teachers make the course a good training for citizenship.

*5. Mathematics*

Arithmetic is taught in Grades 2 to 8B inclusive, and algebra in the final half year. In Grade 1, number is studied incidentally, the aim being to give the child some familiarity with actual number situations and gradually to develop a number vocabulary. Later in the year the pupils develop some familiarity with the use of the written symbols, the meaning of which they have learned by experience. In Grade 2, arithmetic becomes a formal subject and systematic training is provided. The work outlined for this grade is excellent. There seems to be little barren memory grind and much actual number experience. The amount of work to be accomplished is definite, and the outline offers helpful suggestions for handling it. Grade 3 continues the use of number experience, with larger emphasis upon abstract number work. The aim is complete mastery of all addition, subtraction, multiplication, and division combinations through the table of 8's, reading and writing numbers of four places, and familiarity with certain arithmetical terms. Similar clearly stated aims are set forth for the following grades, and many excellent suggestions are made for carrying on the work. From the start constant use is made of standardized tests.

The work in algebra follows a text and aims merely to introduce the class to the simple fundamentals. For pupils who go on to high school and college the work may be useful. For those who do not, the time could be used to better advantage if it were devoted to a study of business arithmetic, business forms, keeping accounts, short methods for computing interest, etc. Very few people use algebra, but nearly every one must become familiar with the simple forms of business practice.

*6. Music and Art*

Music and art are taught throughout the entire eight years and are given a fair proportion of time. The courses

in music are very fully outlined, and ample suggestions for directing work are given. The plan of work is well in accord with the plans in use in our better school systems. The art work is similarly well planned, and the applied work of the upper grades is especially well worked out. The suggestions to teachers are not adequate, with the present limited amount of supervision.

### *7. Physical Training*

The work in physical training is given to all pupils through the entire eight years. While it is well planned, not so much can be said for what is actually accomplished in the schools. Supervised play should have more attention in all the schools, as should positive drills, callisthenics, and apparatus exercises. Much need exists for real supervision of this work.

#### TIME ALLOTMENT, OR THE RELATIVE IMPORTANCE OF STUDIES

There are two other angles from which we wish to view Boise's curriculum. First, from the standpoint of the time devoted to the various studies, and second (in the following chapter), from the standpoint of what is going on in the classrooms and the results being obtained.

In many of the recent school surveys careful study has been made of time allotment, and the results reported are of interest in showing the consensus of opinion over the country, touching this question. Table 18 shows the largest, the average, and the smallest amounts of time respectively devoted to the various classes of the upper half grades in Boise.

The wide variability in allotments as shown in this table is very striking. One first-grade class in reading devotes 900 minutes per week to the subject, while another class, supposed to do exactly the same work, reported but 300 minutes per week. Similar differences will be found all through the table.





It is, of course, desirable that there should be variation. No one allotment would suit the needs of all schools and classes, but the extent of difference shown by this table raises a question which Boise's teachers and supervisors must try to answer. These differences are brought out even more clearly in Table 19, which shows the number of minutes per week devoted to the subject of spelling by each teacher of the subject in each of the grades in Boise. For comparative purposes as well as in fairness to Boise, similar data for the schools of Oakland and Salt Lake City are included in this table. From these figures we read that 1 second-grade teacher in Boise devotes 200 minutes per week, 4 devote 150 minutes per week, 1 devotes 110, 5 devote 100, etc., to spelling. A mere glance at this table brings to light a problem which school people must face. We want elasticity in the management of children, but there can be no justification for the wide differences shown in these tables.

Using the average time allotment in each subject as a basis, Figure 12 shows approximately how the entire eight years' time of the elementary school pupil in Boise is divided up if he takes all the subjects offered.

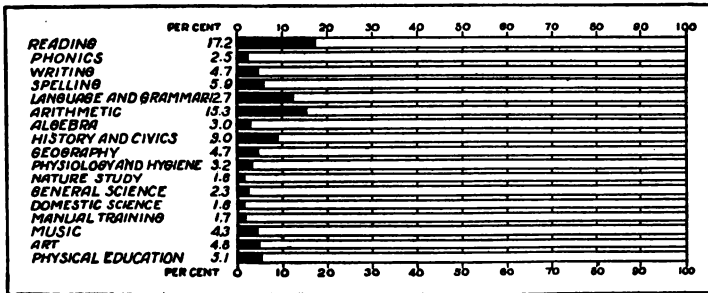


FIG. 12. ALLOTMENT OF TIME AMONG THE VARIOUS SUBJECTS OF THE ELEMENTARY SCHOOL CURRICULUM

From this it will be seen that the three R's still dominate the schools. In Figure 11, history and civics, physiology

TABLE 19. SHOWING DISTRIBUTION OF ALL CLASSES IN SPELLING IN OAKLAND, SALT LAKE CITY, AND BOISE, WITH RESPECT TO THE GRADE AND THE AMOUNT OF TIME SPENT ON THE SUBJECT<sup>1</sup>

Minutes per Week	Oakland							Salt Lake City							BOISE						
	Grade							Grade							Grade						
	2	3	4	5	6	7	8	2	3	4	5	6	7	8	2	3	4	5	6	7	8
225 and up	..	..	..	..	..	..	..	2	7	2	..	..	..	..	..	..	..	1	..	..	..
220	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..
215	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
210	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
205	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
200	..	..	1	1	..	..	..	1	6	1	5	1	..	1	1	..	1	1	..	..	..
195	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
190	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
185	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
180	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
175	..	1	1	3	1	..	..	1	7	4	4	8	1	..	..	1	..	..	..	..	..
170	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
165	..	..	..	..	1	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..
160	..	1	..	2	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..
155	..	..	2	..	2	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..
150	..	5	9	4	12	..	..	6	21	22	12	7	7	2	4	5	5	..	..	..	..
145	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
140	..	1	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
135	..	3	2	1	2	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..
130	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..
125	..	4	6	9	6	1	3	..	13	11	10	8	8	5	4	7	9	2	3	1	..
120	..	2	5	1	2	..	2	2	..	1	1	1	..	1	..	..	..	2	..	..	..
115	..	2	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
110	..	2	3	2	2	..	1	1	..	2	2	..	1	..	..	..	1	..	..	..	..
105	..	1	..	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..
100	..	8	11	12	8	11	4	3	19	13	17	19	17	19	9	5	5	4	3	6	2
95	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
90	..	2	3	1	2	7	3	7	..	3	..	2	1	1	..	..	..	..	..	..	..
85	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
80	..	3	1	4	3	2	..	..	1	1	1	..	1	..	..	..	1	1	3	1	..
75	..	5	1	2	1	2	3	1	11	2	1	4	7	7	..	..	1	..	5	..	..
70	..	3	1	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
65	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
60	..	4	..	..	1	4	3	1	1	..	..	2	1	..	..	..	2	..	1	..	..
55	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
50	..	..	..	1	..	..	16	1	..	..	..	1	1	1	..	..	2	..	2	..	..
45	..	1	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
40	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
35	..	2	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	..	..	..	2	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
25	..	1	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..

<sup>1</sup> Data from Sears, "Time Allotment in the Schools of Salt Lake City," *Educational Administration and Supervision*, March, 1916.

and hygiene, music, art, and physical training seem to have a prominent place in the schools. Figure 12 gives these facts a much fuller statement, with the result that the newer subjects tend to dwindle in importance.

Table 20 shows the length of the various courses in the Boise schools in comparison with similar facts for other cities.

TABLE 20

SHOWING THE TOTAL NUMBER OF HOURS DEVOTED TO THE DIFFERENT SUBJECTS IN BOISE AS COMPARED WITH OTHER CITIES

Subject	BOISE	Cleveland <sup>1</sup>	50 Cities <sup>2</sup>
Reading . . . . .	1337	1710	1280
Language-Grammar . . . . .	990	847	864
Spelling . . . . .	436	444	482
Writing . . . . .	369	419	388
Phonics . . . . .	169	. . .	. . .
Arithmetic . . . . .	1189	1065	1008
Algebra . . . . .	234	. . .	. . .
History-Civics . . . . .	676	290	496
Geography . . . . .	369	493	539
Physiology-Hygiene . . . . .	247	116	331
Nature Study . . . . .	122	. . .	. . .
Domestic Science . . . . .	126	330	427
Manual Training . . . . .	134		
General Science . . . . .	183	. . .	. . .
Music . . . . .	336	413	403
Art . . . . .	376	416	460
Physical Education . . . . .	396	345	322

<sup>1</sup> Franklin-Bobbett, Cleveland Survey Report, *What the Schools Teach and Might Teach*. The Survey Committee of the Cleveland Foundation, Cleveland, Ohio.

<sup>2</sup> Henry W. Holmes, "Time Distribution by Subjects and Grades in Representative Cities," in the Fourteenth Year Book of the National Society for the Study of Education, Part I, 1915. University of Chicago Press.

In comparison with Cleveland and with the average for a group of 50 representative cities, Boise's distribution shows entirely too large emphasis upon the group of English subjects. Boise devotes 4601 hours, Cleveland 3420 hours, and

the 50 cities an average of 3014 hours to the teaching of English. It is the opinion of many that the lowest of these figures is too high. In any case, Boise's allotment needs revision. It is now more than one third higher than an allotment that is fairly acceptable over the country. Similarly, Boise's emphasis upon mathematics is too great, while geography, domestic science, manual training and music receive too little attention. Especially commendable, however, is the relatively large amount of time which the Boise schools are devoting to history and civics.

#### SUMMARY AND RECOMMENDATIONS

Boise has ample legal power to develop the kind of curriculum best suited to the needs of the city. The social, industrial, and political life of the city, with its legislative halls, courts, libraries, parks, and wide variety of industrial and commercial life, offers the best of opportunities for connecting the work of the schools with the life of the community.

This chapter has tried to state in brief form what are the modern requirements of a good curriculum, that is, what is good subject matter for school use. In so doing, it has pointed with emphasis to the urgent demand for the kind of facts, principles, and experiences that will help the child to an understanding and an appreciation of life about him. The demand is for less of the memoriter, bookish training and for more in the form of actual participation in the essential social, civic, and economic processes.

In breadth the curriculum of Boise's schools is typical of what is to be found in most cities of that size. In intensity it lays relatively too great emphasis upon the traditional formal studies and too little upon the newer studies. Arithmetic, spelling, and other work in English should be materially reduced, to the end that geography, manual training, domestic science, nature study, art and music may receive greater emphasis.

The whole curriculum, as judged by the mimeographed outlines, would profit if teachers, principals, and supervisors would unite in a thoroughgoing study and revision of each course, having in mind the principles set forth at the beginning of this chapter. The outlines of work in nature study, geography, physiology and hygiene, and general science do not give one the impression that these courses are properly coördinated with each other, and to some degree the same can be said of the work in English. While observation of classes at work gave the staff the impression that the outlines of courses are being properly supplemented by individual teachers, yet such responsibility should not be left too fully to teachers. A printed course that is worth making is worth making well.

This chapter has tried to indicate what a printed course of study should contain and has shown that many of Boise's outlines do not meet such standards.

Finally, if Boise wishes to add a few subjects to the usual offering of the elementary schools, we recommend that the algebra now taught become merely a part of 8th grade arithmetic, and that in its place such applied studies as simple bookkeeping, tool work, mechanical drawing, further work in cooking, sewing and home decoration, and business arithmetic be offered. We recommend also that early steps be taken to establish an intermediate or a junior high school, consisting of Grades 7, 8, and 9, and that large place be provided in its curriculum for such courses as those just suggested, to the end that many of Boise's children may have as good training for *life* as the "few" now have for *higher study*.

## CHAPTER V

### EFFICIENCY OF THE INSTRUCTION

(*The Staff*)

#### GENERAL CONSIDERATIONS

A CURRICULUM is, after all, only as good as it is made in the actual classroom. To make effective any plan of instruction whatever requires good teachers, good supervision, good buildings, and good facilities for work. A careful estimate of the efficiency of Boise's buildings is presented in Chapter IX, from which it will be seen that much yet remains to be done before Boise will have adequate school buildings.

The question of supervision has been dealt with from the standpoint of administration, in Chapter II. It remains here to add that one of the most obvious weaknesses in the instruction as observed by the survey staff is clearly traceable to lack of supervision. As it now stands, the supervisor can do little more in many cases than work out plans and leave orders that things be done "thus and so." So far as the present supervision goes it is useful, but the actual instruction and the general management of the schools would greatly profit if a plan of supervising principalships such as has been suggested above were put into operation.

The teaching staff in Boise has been described in Chapter III. There it was pointed out that Boise's elementary schools are decidedly understaffed, that the staff shows an increasing tendency to change from year to year, and that the average age and experience of teachers are high. Yet in extent and character of training and in attendance at summer schools, as well as in the general cosmopolitan make-up of the group, Boise's staff is up to the average. The additions needed — perhaps ten to fifteen teachers and princi-

pals — to bring the teaching force up to the best standards would undoubtedly bring about substantial improvements of the work in every way.

As to teaching equipment, the schools vary somewhat. There are many good blackboards, though they are very often wrongly placed. The desks are in the main not up to standard, and the general appearance of rooms is on the whole not above average. In some schools there seemed to be a dearth of supplementary books in classrooms, though there were some maps, pictures, charts, and like equipment in evidence, and little of it seemed to be of the dust-covered variety. Nowhere, however, did any member of the staff get the impression that teachers and school officers had more than a minimum amount of the necessary materials for carrying on the work of instruction. This condition was sufficiently marked and the fact of sufficient importance to warrant mention in this connection.

#### OBSERVATIONS OF CLASSROOM WORK

Many visits, of varying length, were made to classrooms, and some attempt was made to use a common set of standards for observing the work. It is not possible to present the results of such observations in a manner that will make them comparable with similar facts in other cities. For that reason it seemed wiser to base criticisms upon the results obtained from standard tests, which reveal far more effectively the present efficiency of classroom work. Such observations as were made, however, were discussed by the members of the staff, and their results can be stated briefly here for what they may be worth.

No member of the staff reported having observed work of a strikingly superior quality. Thinking of the work as "poor," "fair," "good," "very good," and "superior," it is possible to say that some "poor" and much "fair" and "good" work was observed, while a few cases of "very good" work were found. Some teachers were obviously



disturbed by our visits, some were not well prepared on the lesson, some talked too much or quizzed too much, etc. On the other hand, some "very good" instruction in art and arithmetic was observed, where the teacher in charge had an excellent grasp of the work, was reserved but critical, and where the children showed initiative and worked to a well-understood purpose. Good supervision would overcome many of the defects observed in classrooms.

#### STANDARDIZED TESTS

The place of standardized tests in present-day school administration is so well understood that little need be said in explanation of their character or function in a school survey. In the measure of educational products, standardized tests are rapidly coming to serve a purpose similar to that of the "pound," "yard," and "pint" in the commercial world.

In this survey three subjects were chosen for such measurement: viz., writing, arithmetic, and spelling. The results revealed are believed to be fully representative of the work being done in all the branches of study. The scales used have been thoroughly standardized and used so widely as to make it possible to compare Boise's showing with that made by large numbers of school systems over the country.

The tests in handwriting show that the work being accomplished in the different grades is quite uneven both as to quality and speed. In quality the city ranks below standard, while in speed it is slightly above standard. The wide variety of results shown by different classes, different grades, and different schools is the strongest evidence that supervision of this subject is weak. There are no sufficiently marked social differences among the pupils of the city to explain the differences shown in these test results.

The tests in spelling brought out the same abundance of unevenness in results. One school spells with an efficiency of 90 per cent, while another drops to 70 per cent. Grade 3 in the Central School makes a score of 63, while the same

grade in Whittier School makes 98. More than 5 per cent of all the children made scores below 40, while 23 per cent made the score of 100. This is evidence of a lack of real organization and supervision. It is true that the city as a whole ranks high in spelling. Account must be taken of the time cost of these results. Reference to Table 19 shows that even such good results are not worth the cost, for it has robbed more important studies of much-needed time.

In the arithmetic tests Boise shows good average results in the use of whole numbers but serious weakness in the handling of fractions. There are also the same marked differences between schools and between classes as were found in writing and spelling, which points clearly to the need for a more thorough coördination of the work in this subject and to the genuine need for ungraded classes.

The following sections of this chapter will show the detailed results of the tests in these subjects.

## THE TEST IN HANDWRITING

### *1. How the Tests Were Made*

On Monday, May 26, each teacher in Grades 4 to 8 inclusive was sent the following instructions:

Please write the following sentences on the blackboard:

Four score and seven years ago our fathers brought forth upon this continent a new nation, conceived in liberty and dedicated to the proposition that all men are created equal. Today we are engaged in a great civil war testing whether that nation or any nation so conceived and so dedicated can long endure.

We are met on a great battlefield of that war.

Have the pupils copy this until they are familiar with it. They should then copy it, beginning at a given signal, and write for exactly *two minutes*. Have them all stop at once, and count the words they have written.

[illegible]

*2. Scoring the Papers*

The procedure in scoring was that described by Dr. Ayres in the directions accompanying the "Gettysburg Edition" of his measuring scale for handwriting. This scale consists of a series of handwriting samples which have been selected upon the basis of relative quality value, from samples obtained from tests given to several thousand school children. The steps in the scale are statistically evaluated and specimens grading 20, 30, 40, 50, 60, 70, 80, and 90 are reproduced on the score sheet for comparative purposes.

Each of the 1408 papers from the Boise schools was compared with the samples on the Ayres Scale and was given a grade corresponding to that of the sample which it most nearly resembled in quality. After the papers for each room were graded, they were rechecked and arranged in order of score. Following this, the number of whole letters written on each paper was recorded. Since the papers represented two minutes of writing, the number of letters di-

SCORES OF QUALITY, BY GRADES AND SCHOOLS

Grade 6									Grade 7						Grade 8					
Central	Garfield	Lincoln	Longfellow	Lowell	Park	Washington	Whittier	All Schools	Central	Garfield	Longfellow	Lowell	Park	All Schools	Central	Garfield	Longfellow	Lowell	Park	All Schools
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1	..	..	..	..	1	2	1	5	2	3	3	1	3	12	5	3	4	1	..	1
..	1	1	..	..	1	2	7	14	13	3	6	2	3	27	11	6	5	2	4	13
1	3	6	1	2	9	10	8	40	15	28	10	13	74	23	7	15	9	12	66	28
7	14	8	11	8	22	12	10	92	30	7	30	14	26	107	23	6	17	13	19	78
11	13	13	12	7	18	5	2	81	19	1	14	7	13	54	14	5	13	4	13	49
8	1	4	9	2	4	1	2	31	6	..	3	4	4	13	1	1	2	..	1	5
..	..	..	4	..	..	..	..	4	..	..	..	..	..	1	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	32	32	37	20	56	37	25	267	85	22	82	38	63	290	77	28	56	30	49	240
45	52	40	43	51	53	60	59	52	57	65	59	57	54	57	60	63	54	59	56	58
54	54	54	54	54	54	54	54	54	58	58	58	58	58	58	62	62	62	62	62	62

TABLE 21. DISTRIBUTION OF HANDWRITING SCORES OF

No. of Letters per Minute	Grade 4										Grade 5									
	Central	Garfield	Hawthorne	Lincoln	Longfellow	Lowell	Park	Washington	Whittier	All Schools	Central	Garfield	Hawthorne	Lincoln	Longfellow	Lowell	Park	Washington	Whittier	All Schools
110 and Over.	..	..	..	..	2	1	3	..	..	6	..	3	..	..	2	..	..	..	..	85
100-109	..	..	..	..	..	2	..	..	3	5	..	1	..	..	3	1	..	..	..	85
90-99	..	..	..	..	1	5	3	1	2	14	..	2	1	1	5	2	1	..	..	12
80-89	1	1	1	..	6	9	5	2	2	27	7	..	1	1	7	10	6	2	..	40
70-79	3	1	2	7	12	9	11	10	9	64	10	10	4	1	11	8	10	5	..	65
60-69	10	11	9	7	11	4	7	11	6	76	13	4	7	9	15	5	10	4	5	72
50-59	6	5	3	7	3	..	10	8	4	46	5	1	1	7	5	1	7	11	7	45
40-49	8	10	5	4	7	1	8	2	3	48	..	1	1	5	5	4	11	12	15	52
30-39	1	2	3	1	1	..	2	1	1	12	..	1	..	2	..	1	2	4	..	10
20-29	..	..	..	..	1	..	1	..	..	2	..	..	..	..	..	..	2	..	..	2
Total No.	31	30	23	26	44	31	50	35	30	300	37	36	15	24	53	32	47	40	27	311
Medians	60	53	57	61	68	80	64	63	70	66	70	73	65	60	70	73	63	52	48	68
Ayres Norms	55	55	55	55	55	55	55	55	55	55	64	64	64	64	64	64	64	64	64	64

vided by 2 was recorded as the rate per minute. The distribution of the scores for quality and rate are shown in Tables 20 *a* and 21.

### 3. Boise Ratings in Quality

The entire distribution of scores, by schools and separate grades, is shown in Table 20 *a*. Here the median performance for each separate grade can be compared with the median for the entire city and the general norms. The wide distribution of scores, ranging from 10 to 70 in Grade 4, 20 to 80 in Grade 5, etc., shows how important it is that we recognize the individual differences among children. Variations in native ability are clearly shown in handwriting, and the distribution over such a wide range as we find here is equally characteristic of variability in all the traits which make for school and life success.

How the quality of handwriting in Boise, grade for grade, compares with the norms obtained by Dr. Ayres from the

**SPEED (RATE PER MINUTE) BY GRADES AND SCHOOLS**

Grade 6								Grade 7						Grade 8						
Central	Garfield	Lincoln	Longfellow	Lowell	Park	Washington	Whittier	All Schools	Central	Garfield	Longfellow	Lowell	Park	All Schools	Central	Garfield	Longfellow	Lowell	Park	All Schools
..	..	1	11	2	10	..	..	24	..	4	2	6	7	19	21	3	15	1	14	54
8	2	..	2	5	9	..	..	27	4	3	2	9	8	26	18	2	7	1	9	37
10	6	3	9	6	21	5	2	29	9	6	6	10	9	40	8	8	13	5	6	40
14	6	3	3	3	5	11	6	62	35	6	25	9	17	92	17	10	14	7	12	60
5	8	11	1	..	4	9	38	53	27	1	28	3	18	77	11	5	4	12	6	38
1	1	3	..	..	1	7	16	10	1	14	1	4	30	1	..	2	3	..	6	6
..	1	3	..	..	1	7	1	..	1	3	..	..	4	..	..	1	1	1	1	3
..	..	..	..	..	..	2	..	14	..	..	1	..	..	1	1	..	..	..	1	2
..	..	1	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..
28	32	32	37	20	56	37	25	267	85	22	82	38	63	290	77	28	56	30	49	240
87	73	65	98	91	86	66	63	82	83	95	76	96	87	83	100	88	96	78	96	82
71	71	71	71	71	71	71	71	71	76	76	76	76	76	76	79	79	79	79	79	79

scoring of 62,000 samples is shown in Figure 13. The Boise ratings fall slightly below the norms in all grades, the greatest difference being 5 points (Grade 4). The deviation for the city is relatively slight, and it may be safely inferred that the quality of the handwriting of the children of Boise, on the whole, compares favorably with that of the children in other cities. A study of the distribution of scores should be of value in deciding where the emphasis should be placed in order that the handwriting efficiency for the city may be improved. Pupils in Grade 4 who score no higher than 20 points, when more than half of the pupils in the same grade in Boise score higher than 40, are obviously in need of special attention.

To illustrate the variability of pupils within the same grade, a series of samples of the handwriting of Boise pupils has been arranged and reproduced in Figure 14. These have been selected from the best and the poorest papers in each grade, and are suggestive of what would happen if

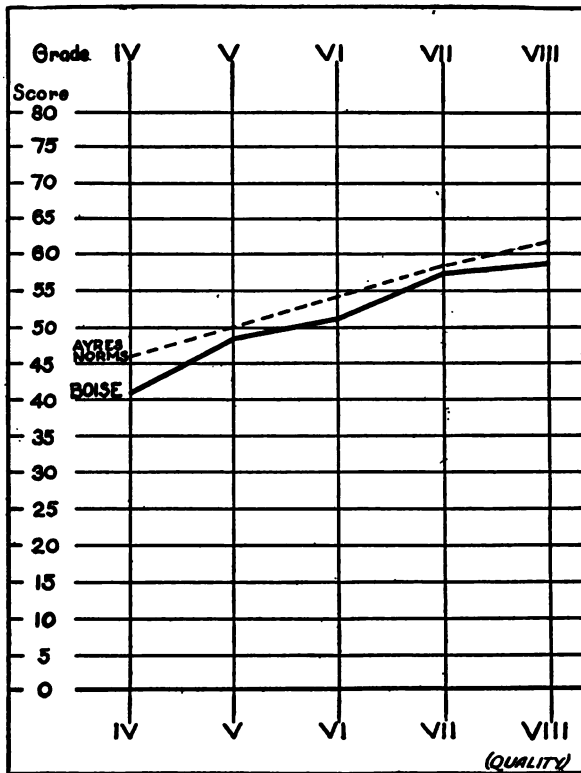


FIG. 13. MEDIAN PERFORMANCE OF BOISE PUPILS IN HANDWRITING QUALITY, BY GRADES, IN COMPARISON WITH STANDARD SCORES

pupils were placed in school grades according to handwriting ability alone. It is obvious that in such an event some of the pupils in the lower grades could exchange places with some of those who will soon be entering high school. Fortunately, handwriting achievement is not the sole basis of promotion.

#### 4. *Boise Ratings in Speed*

The rate of handwriting based on the average number of letters per minute is shown in Table 21. Here again we

<p>Four score and seven years ago our fathers brought forth on this continent a new</p> <p>Four score and seven years ago our fathers brought forth on this continent a</p>
<p>Four score and seven years ago our fathers brought</p> <p>Four score and seven years ago our fathers brought forth on the continent</p>
<p>Four score and seven years ago our fathers brought forth upon</p> <p>Four score and seven years ago, our fathers brought forth on the continent.</p>
<p>Four score and seven years ago our fathers brought forth upon this</p> <p>Four score and seven years ago our fathers brought forth</p>
<p>Four score and seven years ago our fathers brought forth</p> <p>Four score and seven years ago our fathers brought forth on this continent a new</p>

FIG. 14. HANDWRITING SAMPLES SELECTED FROM BEST AND POOREST WRITING IN EACH GRADE (GRADE 4 AT BOTTOM, GRADE 8 AT TOP)



find a wide scattering of scores, suggestive of marked individual differences. In some cases the speed with which different pupils in the same classroom write is such that the contrast is striking. Of 300 pupils in the fourth grade, 62 write fewer than 40 letters per minute, while 52 write more than 80 letters per minute, or more than twice as rapidly. This difference can best be illustrated by quoting the actual passage used in the test, showing the text covered by approximately 40 and 80 letters. One boy in the fifth grade wrote:

Four score and seven years ago our fathers brought (42 letters),  
while another boy in the same class wrote:

Four score and seven years ago our fathers brought forth upon this  
continent a new nation, conceived (83 letters),

these passages representing half of what each wrote in the two minutes of the test. The difference may seem slight, when applied to such a small passage, but when we realize that the second boy can do twice as much written work as the first boy in the same period of time, we cannot help looking at it in the light of its educational significance. It is interesting to note that the papers of the two boys referred to show the same quality ratings, which happen to be up to the average for their grade.

On the whole, the children of Boise write more rapidly than the children of other cities, as judged by a comparison of the median performance, grade for grade, with the norms obtained by Dr. Ayres. The comparison is shown in Figure 15. The rate of increase in Boise is less regular than that shown by Dr. Ayres' curve, and it appears that there is no appreciable increase in speed above the sixth grade. The difference is most marked between the fifth and sixth grades, the increase being approximately 20 per cent (82.68).

### *5. Relation between Quality and Speed*

A study of the speed and quality of Boise handwriting samples resulted in finding a positive correlation of .23.

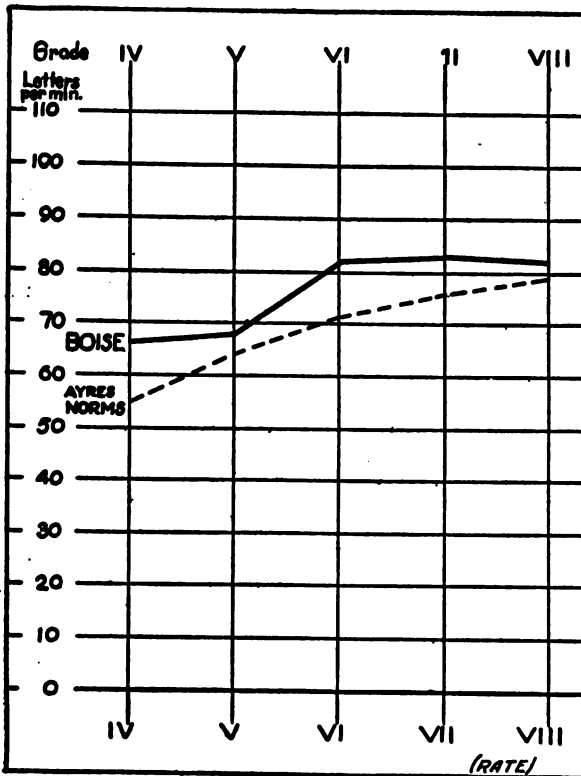


FIG. 15. MEDIAN PERFORMANCE OF BOISE PUPILS IN HANDWRITING RATE, BY GRADES, IN COMPARISON WITH STANDARD SCORES

This means that, on the whole, the pupils who write well also write rapidly; and, inversely, those who write poorly also write slowly. There are many exceptions, of course, and it does not follow that any pupil who improves in the one respect will necessarily in the other. In fact, investigators find that causing a pupil to write more slowly does not improve the quality of his writing. Investigations have also shown that efforts of individuals to increase their speed of writing tends to make them write a poorer quality.

### 6. *The Teaching of Handwriting*

Both the quality and speed of handwriting in the Boise schools can be improved. It has been demonstrated that individual pupils, grades, schools, and entire cities can make material progress in both of these directions in a few months. The extent of the improvement can be determined only by the application of a standardized scale for quality, and the keeping of accurate records as to speed. This can be easily done by the teachers. The compilation of such data at regular intervals, and the making of comparisons, would constitute a valuable coöperative study and would amount to a continuous survey. The Ayres Scale is already used by many of the teachers in Boise, and in some cases it has been admirably adapted to classroom instruction. Competition among classes and schools based on the scale should be of value.

The mooted question as to the relative efficiency of different systems of handwriting has not yet been answered by scientific comparison. It can only be settled, if at all, by impartial gradings on a uniform basis. It is not unreasonable to suppose that at some time the different systems may be arranged in order of their respective merits. All methods tend to develop essential points: *legibility, uniformity, general quality, and speed*. To write clearly, evenly, and rapidly, without any of these factors detracting from the others, should be the aim of every pupil. Children can be taught to watch their progress in relation to that of the other pupils and other schools. Teachers should watch the progress of their pupils, and each should aim to bring her class to the highest possible level of efficiency.

#### THE TEST IN SPELLING

##### 1. *Spelling in the Course of Study*

Formal instruction in spelling begins in the second grade of the Boise schools and continues through the sixth grade.

In the seventh and eighth grades spelling is taught as a part of the regular work in English, history, geography, etc. There is no regular spelling textbook used,—the words employed for drill being selected from “Ayres’ Spelling List, A to O,” “The One Hundred Spelling Demons of the English Language,” and books used as texts and supplementary readers in the various grades. The course of study does not indicate the amount of time per week that it would be profitable for each grade to spend on spelling. As shown in Table 19, the average for all the grades is 110 minutes per week, which, according to the best available data, is fully 25 per cent too much.

## 2. *The Test and How it was Applied*

In measuring the efficiency in spelling the Ayres “Measuring Scale for Ability in Spelling”<sup>1</sup> was employed. Twenty words from list “L” were given to all the pupils in the third grades of the Boise schools; the same number of words from list “O” were given to the fourth, from list “Q” to the fifth, from list “S” to the sixth, from list “U” to the seventh, and a set of twenty words compiled from lists “V,” “W,” “X,” “Y,” and “Z” to the pupils of the eighth grades, respectively.

The Ayres spelling scale was compiled from data obtained through the application of spelling tests in 84 cities, the words of these tests later being arranged in lists and scientifically grouped according to difficulty.<sup>2</sup> The words for the Boise survey spelling test were selected from lists where the average score of the grade to be tested was found to be 73. For example, list “L” was selected as the list from which the twenty words for the third grade would be taken, because in the standardization of the Ayres Scale the average score of third-grade children was found to be 73. In like manner list “O” was chosen for the fourth grade, and so on through

<sup>1</sup> Published by Russell Sage Foundation, New York, N. Y.

<sup>2</sup> For explanation of the scale and how it was made, see *Ayres Measuring Scale for Ability in Spelling*, Russell Sage Foundation.

the seventh. The words for the eighth grade were selected from several lists, but in such a manner as to bring the expected average score to 73 likewise.

We may therefore accept 73 as the standard score which each grade in Boise should attain, if the instruction in this subject is as good as the average in a large number of cities in the United States. As a matter of fact, we could reasonably expect considerably higher scores from the Boise third and fourth grades, because lists "A" to "O" inclusive have been used as a part of their regular course of study in spelling.

These selected lists of words were pronounced to the children by the regular classroom teachers, in accordance with written instructions handed to the principals of the nine buildings and by them communicated to their teachers. The teachers were instructed to follow the ordinary class procedure in the matter of writing, pronunciation, explanation of words of more than one meaning, etc. Immediately upon completion of the test the papers were collected, scored by the teachers, results recorded on sheets prepared for the purpose, and both papers and results sent to the office of the survey commission in the high school building, where the papers were checked for errors.

### *3. Results of the Test*

The results of this test appear in the following tables and diagrams, which present the facts by schools, by grades, and for the city as a whole. The scores are computed according to the method employed by Ayres in arriving at his norms for the Ayres Spelling Scale. Twenty pupils spelling twenty words each would make 400 spellings. If 100 of the spellings were incorrect, the percentage of accuracy would be 400 into 300, or 75 per cent. The median scores by grades and by schools are also shown, because they give a better idea of the spelling efficiency of a group of individuals than does the percentage of accuracy.

*4. Results by Schools and for the City as a Whole*

Table 22 gives the results by schools and for the city as a whole. In this table the schools are arranged in rank order on the basis of the percentage of accuracy. Rank

TABLE 22

SHOWING AVERAGE AND MEDIAN SCORES BY SCHOOLS AND FOR CITY AS A WHOLE

Schools by R. O. <sup>1</sup> of Ac.	No. of Pupils	Total No. of Spellings	Total No. Errors	Per Cent Accuracy	Median Score	R. O. by Median	Av. Time per Week
Hawthorne . . . . .	57	1,140	115	90	95	(1)	193 m.
Central . . . . .	286	5,720	1042	82	85	(3)	141 "
Park . . . . .	319	6,380	1254	80	85	(2)	90 "
Longfellow . . . . .	307	6,140	1245	80	85	(4)	88 "
Lowell . . . . .	196	3,920	802	80	80	(7)	83 "
Washington . . . . .	152	3,040	677	78	85	(6)	88 "
Whittier . . . . .	109	2,180	496	77	80	(8)	106 "
Garfield . . . . .	175	3,500	837	76	85	(5)	116 "
Lincoln . . . . .	104	2,080	625	70	75	(9)	124 "
All . . . . .	1705	34,100	7093	79	85	. .	110 "

<sup>1</sup> R. O. = Rank order.

order by median scores is indicated by the figures in parentheses at the right of the column marked "Median Score." The last column on the right gives the average amount of time per week devoted to spelling in each school. This table shows the average spelling ability of the pupils in the different schools. Hawthorne School, with 90 per cent of accuracy on the Ayres Scale, has the highest average score, and Lincoln School, with 70 per cent, has the lowest average score. The latter is the only school in which the general average falls below the Ayres Scale norm of 73 per cent.

For the city as a whole the per cent of accuracy is 79, or 6 points above the Ayres standard on the same words. From the column of median scores it appears that at least 50 per cent of the children in every Boise school made a score of 75 per cent or better. In the Hawthorne School 50 per cent of the children made scores of 95 or 100. This is a small school, however, with only 57 pupils in the third, fourth, and fifth grades present on the day the test was given. The average amount of time devoted to spelling in the Hawthorne School is 193 minutes per week, or 83 minutes per week more than the average for the city as a whole. Spelling efficiency in this school is undoubtedly attained at too great a cost in time. This 83 minutes would better be used otherwise.

#### *5. Results by Schools, by Grades, and for the City as a Whole*

Table 23 shows the distribution of average scores in spelling by schools, by grades, and for the city as a whole, as well as the total number of pupils in each of the grades. The data presented in this table are graphically set forth in Figure 16, which shows the highest and lowest grades in each school, the school average, the average for the city as a whole, and the Ayres standard norm for the words given to each grade.

There is a marked difference in spelling efficiency between the different grades of the same school. From the figures above and below the margins it may be seen that the third grade in the Central School made only 64 per cent, whereas Grade 5 made an average score of 93 per cent. The Whittier School presents a similar extreme case, where the third grade made a score of 98 per cent, while the fourth grade made an average score of only 69 per cent. The grade making the lowest average score for the city as a whole was the fourth grade of the Lincoln School, with an average of only 55 per cent, while the highest score was made by the

TABLE 23. SPELLING TEST, DISTRIBUTION OF AVERAGE SCORES BY SCHOOLS, BY GRADES, AND FOR THE CITY AS A WHOLE

Schools	Total Ave.	Grades					
		8	7	6	5	4	3
Total for City . . . . .	79	83	83	80	77	77	78
Central . . . . .	82	87	83	76	93	77	64
Garfield . . . . .	76	83	87	73	73	71	73
Hawthorne . . . . .	90	. .	. .	. .	86	91	92
Lincoln . . . . .	70	. .	. .	64	85	55	81
Longfellow . . . . .	80	81	88	76	78	69	76
Lowell . . . . .	80	87	95	75	63	81	69
Park . . . . .	80	75	68	94	80	93	73
Washington . . . . .	78	. .	. .	92	64	75	83
Whittier . . . . .	77	. .	. .	79	79	69	98
Pupils in Grades . . . . .	1705	245	296	270	311	301	282

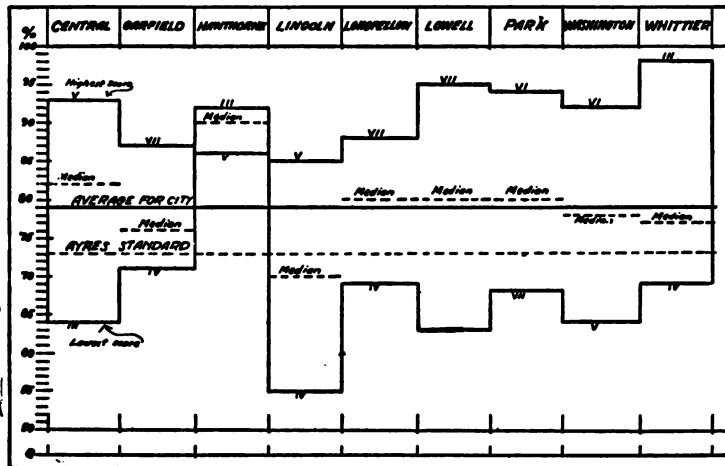


FIG. 16. RESULTS OF THE SPELLING TESTS BY SCHOOLS

Upper margin: highest score made by any grade in each school; lower margin: lowest score made by any grade in each school; straight line: average score for all the schools together; dotted line: average score of each school by itself; full dotted line: Ayres' standard for words used in test.



TABLE 24. SHOWING THE PERCENTAGE OF CHILDREN OF EACH GRADE

Grade	Possible Scores									
	100	95	90	85	80	75	70	65	60	55
8	15.5	17.8	13.9	18.5	5.4	6.5	5.6	4.4	4.0	2.8
7	30.5	19.0	7.3	7.5	5.3	4.0	5.0	6.0	2.4	1.3
6	26.0	12.0	7.3	9.3	8.2	11.2	7.3	5.3	2.2	3.0
5	21.0	14.0	10.5	8.0	9.5	10.0	4.5	4.2	3.2	2.2
4	22.4	11.2	10.0	7.6	7.6	6.3	6.0	5.0	5.0	5.0
3	22.6	11.9	10.0	5.6	9.0	5.6	6.0	6.3	4.5	3.5
City Total	23.0	14.1	9.7	9.4	7.4	7.3	5.6	5.2	3.5	3.0

third grade of the Whittier School, with a score of 98 per cent. All the grades on the lower margin, except the fifth grade of the Hawthorne School, made average scores below both the city average and the Ayres standard norm, and give evidence of spelling efficiency below what should reasonably be expected of them. Grade 4 most often ranks lowest; Grade 7 most often ranks highest, and there is very little correlation between amount of time spent in the study and recitation of spelling and average scores attained in the spelling test.

The above comparison of schools based on the best average score made by any grade, or on the lowest average score made by any grade, or the comparison of any given school with the city average and with the Ayres standard norm, clearly indicate the diversity of standards that exist among the different schools and among the different grades in the same school and suggest the necessity for careful administrative attention to the problem of equalizing the differences that now exist.

WHO ATTAINED EACH OF THE POSSIBLE SCORES IN SPELLING<sup>1</sup>

Grade	Possible Scores										
	50	45	40	35	30	25	20	15	10	5	0
8	.8	1.6	1.6	.4	.8	.4	...	...	..	..	..
7	2.4	3.6	1.6	.3	.3	.6	.6	1.3	..	..	..
6	1.0	1.0	1.6	.7	1.5	1.0	.3	.7	.3	.3	..
5	2.0	4.0	2.3	1.0	1.5	.6	.6	.6	.3	..	..
4	3.3	2.0	2.0	1.6	1.0	.7	1.0	.3	.7	.3	.7
3	2.0	3.1	3.0	2.0	1.4	1.4	.7	.7	.0	.7	..
City Total	2.0	2.0	2.1	1.0	1.1	.8	.6	.7	.4	.4	.7

<sup>1</sup> 70.9 per cent make scores above the Ayres norm of 73.

29.1 " " " " below " " " " 73.

*6. Results by Individuals*

In order to get a complete picture of the spelling efficiency of the school children of Boise, it is necessary to study the individual scores of the children in the spelling test as well as the average scores by schools and by grades. For example, the average score of the pupils in the third grade of the Hawthorne School was 92 per cent, yet 74 per cent of the mistakes were made by 30 per cent of the pupils. The third grade of the Lincoln School made an average score of 81 per cent, but 91 per cent of the mistakes were made by 40 per cent of the pupils. These cases suggest that a few very poor spellers in a given grade may pull down the average of that grade materially. A distribution by individual scores will indicate proportion of poor and very poor spellers in the different grades and in the city as a whole.

Table 24 shows the distribution of the individual scores and the percentage of children of each grade who attained each of the possible scores from 100 to 0 inclusive.

The facts presented in Table 24 are shown graphically in Figure 17, for each grade separately and for the city as a whole.

Discussing, first, the distribution of scores for the entire city, which includes the records of 1705 children, we find that 23.0 per cent, or nearly one fourth of the total number, spell the entire twenty words of the test correctly; 14 per cent spell all but one word correctly; 9.7 per cent spell all but two, and 9.4 per cent spell all but three of the words of the test correctly. All the other possible scores, including 0, are represented in the table by rapidly decreasing percentages of children.

When the distribution by grades is considered, we find that Grades 3, 4, and 5 have a distribution similar to the one for the city as a whole, while Grades 6 and 7 have higher percentages, attaining the score 100, and Grade 8 has higher percentages attaining scores 95 and 85 than attain 100.

Figure 18 shows the proportion of "good spellers" to "poor spellers" for each grade and for the entire city. There are 71 per cent of the children of the Boise schools whose spelling ranks above the Ayres Scale standard (73), and 29 per cent whose scores fall below that standard. The eighth grade makes the best showing in this comparison, with 77.6 per cent of its pupils attaining scores above the Ayres standard, while the third and fourth grades make the poorest showing with only 64.7 and 65.4 per cent of their pupils attaining scores above the standard.

From Table 24 and Figures 17 and 18 it appears that the spelling test was too easy for approximately 25 per cent of the children in the Boise schools, and too difficult for another 25 per cent. The pedagogical problem presented is, how to adjust the work in spelling in such a way as to provide work sufficiently difficult to enlist the best energies of the "good spellers," thus saving them from acquiring habits of idleness, and likewise how to bring the "poor spellers" up to a reasonable standard of efficiency without devoting a

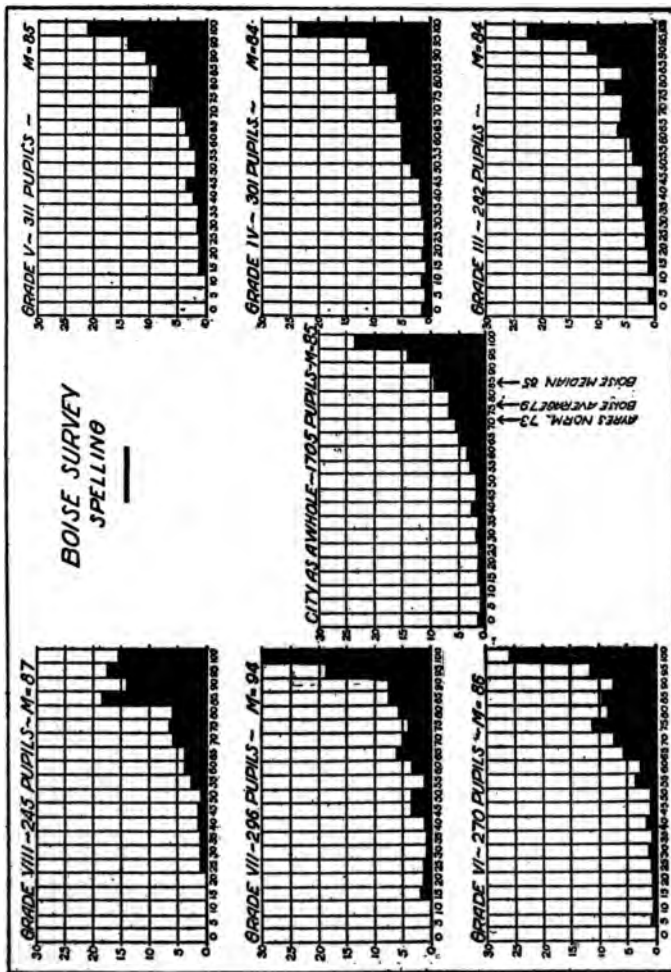


FIG. 17. SHOWING FOR CITY AS A WHOLE, AND BY GRADES, THE PERCENTAGE OF CHILDREN ATTAINING EACH OF THE POSSIBLE SCORES

disproportionate amount of time to the spelling work. It is very doubtful if satisfactory results can be secured under the present plan of conducting spelling exercises by whole

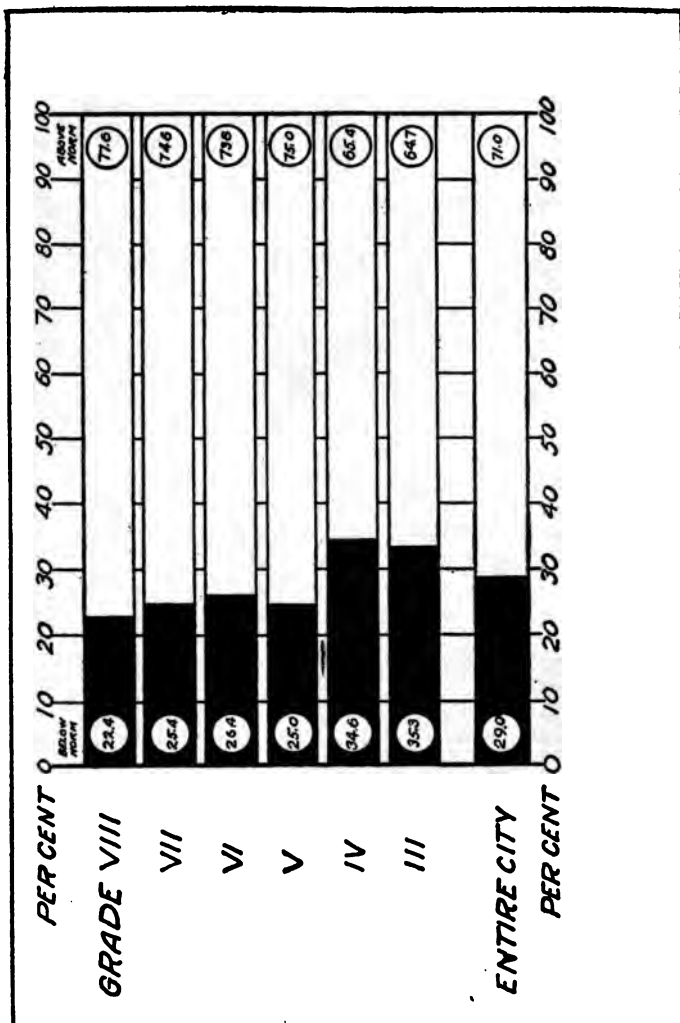


FIG. 18. SHOWING PER CENT OF PUPILS IN EACH GRADE AND FOR THE CITY AS A WHOLE ATTAINING, AND THE PER CENT OF THOSE FAILING TO ATTAIN, THE AYRES STANDARD SCORE OF 73

or half grades. By the use of standard tests, and by plotting the daily scores in spelling, it should be possible for teachers

to group their pupils according to spelling ability. Work could then be given to these groups commensurate with their capacity to perform it. Whenever the "fast" group had attained approximate perfection in the spelling work assigned to its school grade, formal spelling for the members of that group could be dispensed with and the attention of the teacher concentrated upon the "slow" group. In this way much time would be saved to those who are ahead of their grade in spelling, while those who are behind would receive the individual attention they need to bring their work up to the standard. Also the extreme variations that now appear between the spelling abilities of individuals and of grades would tend to disappear.

### *7. Conclusions*

In general it may be said, then, that while Boise ranks well above the Ayres standard in average spelling efficiency, it ranks low in the percentage of poor spellers found in each grade, and there is evidence of serious lack of coördination in the amount of time devoted to spelling in the different grades. Considering the way in which it is utilized, there is too much time given to spelling in most of the grades. According to the plan suggested above, of grouping pupils according to ability for purposes of drill in spelling, time could be allotted according to the needs of the groups organized. The "slow" groups could be given sufficient time to permit a considerable amount of individual attention to their needs by the teacher, while the "fast" group could be given less time, or more difficult work to accomplish.

The excellent showing of the Boise schools in the spelling test should not blind the administrative authorities to the necessity of making the necessary adjustments in methods of supervising the teaching of spelling in order to reduce to a minimum the number of pupils who fall below a reasonable standard of spelling efficiency. The present showing of 29 per cent who failed to reach the Ayres Scale standard

of 73 per cent of accuracy should stand as a challenge to teachers and supervisors alike, spurring them to make a determined coöperative effort to improve conditions with respect to the subject of spelling.

#### THE TEST IN ARITHMETIC

Tests in arithmetic were given to pupils in seven schools, in Grades 3 to 8 inclusive, during the last week of May, 1919.

##### *1. Character of Tests*

The tests used are known as the *Cleveland Arithmetic Tests*. They cover the fundamental operations of arithmetic. There were fifteen different sets, designated by the letters A, B, C, D, E, F, G, H, I, J, K, L, M, N, and O. The sets were arranged in ascending series according to difficulty, but the different operations were interwoven in such a way as to give change and variety sufficient to sustain interest and reduce fatigue to a minimum. The examples in Set A were in the addition of two figures. Set E was addition again in the form of five-figure columns, Set J, of thirteen-figure columns, and Set M was composed of examples in the addition of four columns of five figures each. Set B was of the subtraction of one figure from one- or two-figure numbers; Set F, subtraction of three-figure numbers from three- and four-figure numbers. Sets C, G, and L were in multiplication; Sets D, I, K, and N, in division; and sets H and O, in fractions.

The above-described tests were used because they cover all the fundamental operations in arithmetic according to a spiral arrangement as to difficulty and likewise because essentially the same tests have been recently employed in the school surveys of Cleveland, Ohio, Grand Rapids, Michigan, and St. Louis, Missouri. The results of the tests in Boise, therefore, will show not only the absolute achievement of Boise public school children in the various phases of the subject of arithmetic, but also their relative achieve-

ment when compared to the children of other cities where the same tests have been applied.

## *2. Methods of Applying Test*

Members of the survey staff, assisted by principals, teachers, and supervisors carefully instructed in the methods of giving the tests, conducted the test exercises in the schools selected for the purpose. The time allowances were the same for each set as employed in the Cleveland and other surveys and ranged from thirty seconds to three minutes, according to the complexity of the operation. Between each two sets a few minutes' rest period was allowed, and after the completion of the ninth set a ten-minute out-of-doors recess was given before the last six sets were attempted. The following instructions to pupils were printed on each test folder:

Inside this folder are examples which you are to work out when the teacher tells you to begin. Work rapidly and accurately. There are more problems in each set than you can work out in the time that will be allowed. Answers do not count if they are wrong. Begin and stop promptly at signals from the teacher.

At the conclusion of the test teachers read the correct answers aloud, instructing the children to mark each correct example with a "C." The children were then told to count the number of examples attempted and the number of C's and to write the numbers in the columns at the right of the page marked "Ats." and "Rts.," respectively. Results were then transferred to the first page of the folder for ready reference, and teachers carefully verified the results before turning the folders over to the representative of the survey staff. Finally, all papers were checked for errors by the members of the survey staff and their trained assistants.



### 3. *General Results*

The median number of examples solved correctly in each set by each grade for the city as a whole is set forth in Table 25. The third grades attempted only the first four sets, A, B, C, and D, while the fourth grades did not attempt Sets N and O. Wherever "o" appears in the tables as the median score of a grade, it means that more than 50 per cent of the pupils in that grade earned a score of "zero" in that set — i.e., failed to solve any of the examples attempted.

Table 25 shows relatively constant progress from grade to grade in each of the fundamental arithmetical processes covered by the different sets, the most striking exception to this rule being found in connection with the median scores attained in Set H, addition of simple fractions with like denominators. In this set the fourth grade makes a score of o, the fifth, a score of 3.7 examples, the sixth, a score of o, the seventh, a score of 3.5 examples, and the eighth, a score of 5.8. There is only a difference of 2.1 examples between the score of the fifth grade and that of the eighth grade, while the sixth fails entirely and the seventh makes a lower score than the fifth in this set.

In Set O, on the other hand, which involves complex operations in fractions, there appears to be consistent progress from grade to grade, beginning with the fifth. The fact that Grade 6 made a median score of 2.7 examples solved in Set O (complex fractions) and a score of o in Set H (simple fractions) would argue that it was something in the nature of test H that caused the results to be so uneven. Comparison of the Boise results with those in other cities seems to point, on the other hand, to rather serious deficiencies in the Boise method of handling the subject of fractions.

### 4. *Comparison with Cleveland*

In Figure 19 comparison is made between the median scores of all the grades in Boise in all sets, with similar

TABLE 25

MEDIAN SCORES BY GRADES IN ALL SECTIONS OF ARITHMETIC TEST  
FOR ENTIRE CITY

Section of the Test	Grades Tested						
	3	4	5	6	7	8	
A . . . . .	19.8	23.6	26.4	28.1	26.8	32.4	
B . . . . .	11.3	16.5	18.4	20.6	21.0	23.7	
C . . . . .	10.0	15.6	16.4	18.1	17.5	21.5	
D . . . . .	9.4	13.9	15.5	17.8	19.1	21.8	
E . . . . .	....	5.3	6.1	6.5	6.7	7.0	
F . . . . .	....	5.6	7.1	8.2	9.2	9.9	
G . . . . .	....	4.3	5.2	6.5	6.2	6.9	
H . . . . .	....	0	3.7	0	3.5	5.8	
I . . . . .	....	1.5	1.8	2.9	3.8	4.0	
J . . . . .	....	3.9	4.1	4.8	5.0	5.4	
K . . . . .	....	3.8	5.5	7.4	8.0	10.0	
L . . . . .	....	2.3	3.4	3.6	4.4	4.7	
M . . . . .	....	3.8	4.3	4.7	5.0	5.8	
N . . . . .	....	....	1.1	1.8	2.0	2.1	
O . . . . .	....	....	1.5	2.7	3.2	3.6	
No. of Pupils . . .	89	162	171	219	236	243	Total 1120

scores attained by the public school children of Cleveland. The Boise scores are represented by the solid bars, the Cleveland scores by the broken bars. It may be said in general that the Boise third and fourth grades make higher scores, set by set, than do the Cleveland third and fourth grades; that there is very little difference between the median scores of the two cities for the fifth and sixth grades, except in test H, where Cleveland makes much the better showing; and that the Cleveland seventh and eighth grades appear to make better median scores in a majority of the sets than do the Boise seventh and eighth grades. Of the 78 median scores compared there are 40 in which the chil-

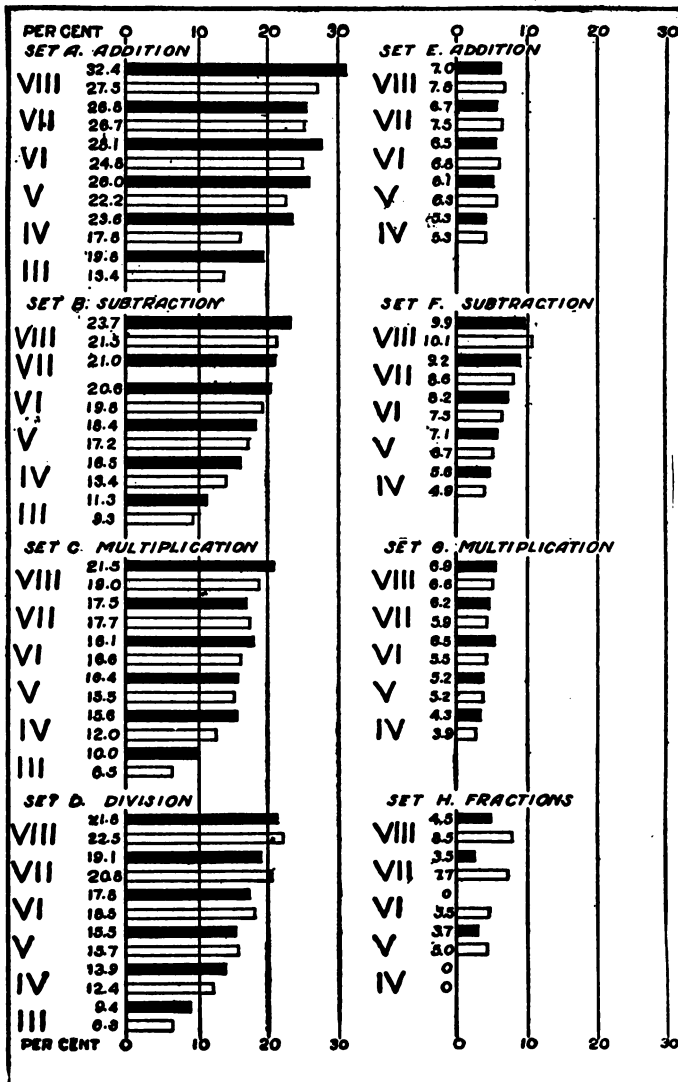
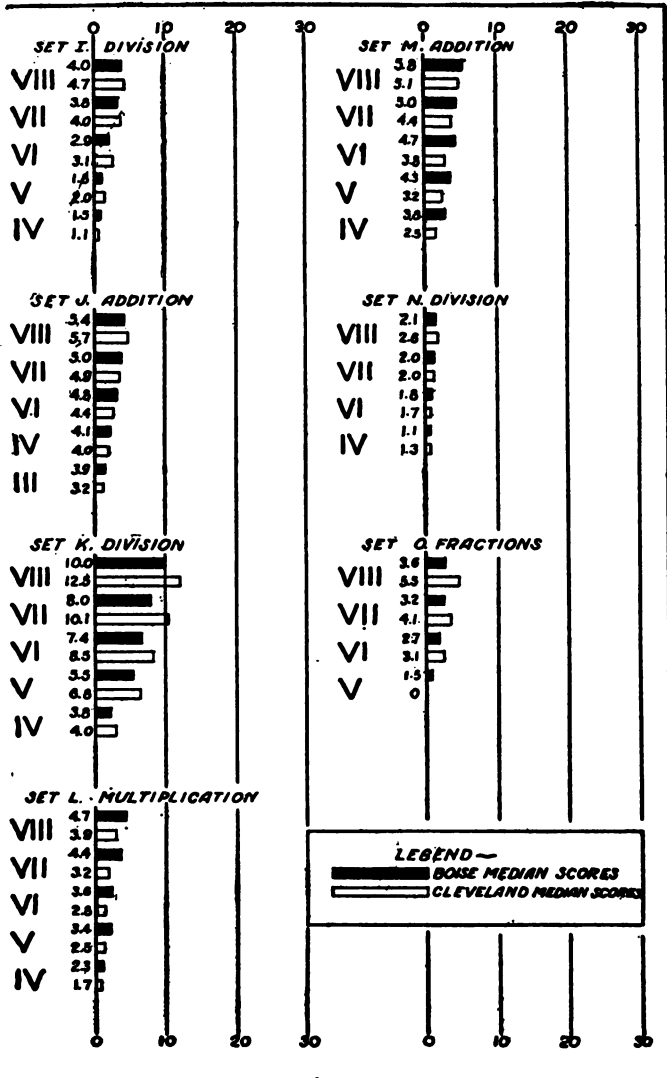


FIG. 19. COMPARISON OF THE MEDIAN SCORES IN BOISE

# Efficiency of the Instruction

III



WITH SIMILAR SCORES ATTAINED IN CLEVELAND

dren of the Boise schools made higher scores, 34 in which they made lower scores, and 4 in which they made the same score as the children of the same grades in the Cleveland schools.

#### *5. Comparison of Boise with Three Other Cities*

In Table 26 comparison is made between the median scores by grades in Sets H, K, L, M, and O, for Boise, Cleveland, Grand Rapids, and St. Louis. Sets H and O are fractions; Set K is of long division where three-place and four-place numbers are divided by two-place numbers; in Set L, four-place numbers are multiplied by two-place numbers; in Set M, four columns of five figures each are to be added.

When we compare Boise's record in Set H with that of the other three cities, we find that Boise occupies fourth place, while St. Louis occupies first place. The record of the St. Louis fourth grade, a median of 7.3 examples solved, is 1.5 examples higher than the Boise eighth-grade record. If we assume that the results attained in Set H by the Cleveland and Grand Rapids schools represent a reasonable standard of achievement, it is apparent that Boise is attaining very unsatisfactory results, while St. Louis is probably spending too much time on the subject of fractions.

In Set K, Cleveland occupies first place, Boise and St. Louis are about equal, and Grand Rapids makes the poorest showing. In fairness to the three last-named cities it should be said, however, that the examples used in Set K in the Cleveland survey were easier than the examples for Set K in the revised test used in Grand Rapids, St. Louis, and Boise. The development of ability to handle problems in long division seems to be quite consistent from grade to grade in all four cities.

In the multiplication of four-place numbers by two-place numbers (Set L), St. Louis again occupies first place, Boise and Grand Rapids make records that are about equal, and Cleveland is at the bottom.

TABLE 26

COMPARING MEDIAN SCORES BY GRADES IN SETS "H," "K," "L," "M," AND "O," FOR BOISE, CLEVELAND, GRAND RAPIDS, AND ST. LOUIS SCHOOLS

Set H, Simple Fractions

Name of City	Boise	Cleveland	Grand Rapids	St. Louis
Median Scores by Grades				
4 . . . . .	0.0	0.0	0.0	7.3
5 . . . . .	3.7	5.0	6.3	5.7
6 . . . . .	0.0	5.5	6.5	8.1
7 . . . . .	3.5	7.7	7.8	9.6
8 . . . . .	5.8	8.5	8.8	11.4

Set K, Long Division

4 . . . . .	3.8	4.0	...	3.7
5 . . . . .	5.5	6.8	3.7	5.4
6 . . . . .	7.4	8.5	5.9	7.2
7 . . . . .	8.0	10.1	8.2	9.0
8 . . . . .	10.0	12.5	10.0	11.0

Set L, Multiplication, Two Place

4 . . . . .	2.3	1.7	...	2.7
5 . . . . .	3.4	2.5	2.6	3.3
6 . . . . .	3.6	2.8	3.4	4.2
7 . . . . .	4.4	3.2	4.4	4.7
8 . . . . .	4.7	3.9	4.9	5.2

Set M, Addition, 4 Columns, 5 Figures Each

4 . . . . .	3.8	2.5	2.3	3.1
5 . . . . .	4.3	3.2	3.3	3.5
6 . . . . .	4.7	3.8	4.4	4.3
7 . . . . .	5.0	4.4	5.0	4.7
8 . . . . .	5.8	5.1	5.7	5.3

TABLE 26 (continued)  
Set O, Fractions, All Operations

4 . . . . .	...	0.0	...	2.5
5 . . . . .	1.5	0.0	...	3.3
6 . . . . .	2.7	3.1	3.6	3.9
7 . . . . .	3.2	4.1	4.3	5.2
8 . . . . .	3.6	5.5	5.1	6.4

Boise occupies first place in the comparisons for Set M, addition of four columns of five figures each, and requiring the carrying forward of results. St. Louis and Grand Rapids make records that are about equal, while Cleveland comes last again.

Set O requires addition, division, subtraction, and multiplication of fractions. St. Louis occupies first place, Cleveland and Grand Rapids are about equal, and Boise is last. The St. Louis sixth grade makes a better score than the Boise eighth grade in this set.

If Boise had made an inferior record in a majority of the sets when compared to the records of the other three cities, it might be possible to explain the failure in dealing with fractions on the ground of the nine weeks' interruption of school activities on account of the influenza epidemic during the school year 1918-19. But since Boise's record compares favorably with the records of the other three cities in all the sets, except the two sets involving fractions, it is apparent that the failure here is due to some cause that can be eliminated by proper teaching and supervision. The treatment of fractions is the outstanding weakness of the Boise schools so far as the subject of arithmetic is concerned.

### 6. *Results by Schools*

Median scores by grades for each school in each test set are included in Table 27. The general results shown in Tables 25 and 26 are useful as revealing the status of the Boise public schools when compared with the schools of other cities in regard to progress in arithmetic. Table 27 is of much greater interest to Boise teachers and school officials, because it discloses the results, set by set, for each grade and in each school where the tests were given. Thus a third-grade teacher in the Whittier School is enabled to compare the median scores attained by her pupils in the four sets of examples with the scores of all the other third grades taking the tests and also with the city medians for that grade.

The Longfellow School fourth grade makes a median score of 7.8 examples in Set H, while all the other fourth grades, except the Whittier, make median scores of 0. In fact, the record of the Longfellow School in Set H supports the contention that proper methods and supervision in the teaching of fractions would have brought Boise's record up to that of the other cities. Longfellow's grades make the following scores in Set H: fourth, 7.8; fifth, 8.0; sixth, 4.0; seventh, 9.0; eighth, 10.2, or about the equivalent of the median scores made by the St. Louis schools. Contrast the Longfellow scores in Set H with the scores made by Park School, which were: fourth, 0; fifth, 2.5; sixth, 0; seventh, 0; eighth, 0. Certainly the responsibility for such extreme differences in median scores must be laid to inadequate teaching and supervision.

Differences that exist between grades in the same school may be illustrated by the contrast between the results attained by all the grades in the Longfellow School, except the sixth. When the median scores earned by the fourth, fifth, seventh, and eighth grades of the Longfellow School are compared with the scores of the other schools, set by set, Longfellow ranks 1, 2, or 3, consistently, but when it comes to the Longfellow sixth grade the rank is 7.



TABLE 27  
COMPARISON OF MEDIAN SCORES BY GRADES AND SCHOOLS FOR EACH TEST SET  
THIRD GRADES. Total Number Pupils, 89

Name of School	Sets of Tests														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Whittier . . . . .	21.5	13.7	7.3	8.8	...	...	...	...	...	...	...	...	...	...	...
Garfield . . . . .	18.5	10.4	7.5	6.3	...	...	...	...	...	...	...	...	...	...	...
Longfellow . . . . .	10.7	11.4	6.8	8.7	...	...	...	...	...	...	...	...	...	...	...
Central . . . . .	23.1	13.2	10.5	10.4	...	...	...	...	...	...	...	...	...	...	...
Washington . . . . .	18.2	10.1	7.5	7.4	...	...	...	...	...	...	...	...	...	...	...
Grade Median . . . . .	19.8	11.3	10.0	9.4	...	...	...	...	...	...	...	...	...	...	...

FOURTH GRADES. Total Number Pupils, 162															
Whittier . . . . .	25.4	15.6	13.5	13.2	5.8	5.0	3.8	3.3	0.0	2.8	3.7	0.0	3.4	0.0	...
Park . . . . .	26.0	16.0	13.2	13.5	5.1	6.0	4.6	0.0	1.8	4.3	5.6	3.4	4.4	1.4	...
Garfield . . . . .	20.1	18.8	17.1	15.0	0.3	5.3	4.1	0.0	3.1	4.3	3.3	3.3	3.0	0.0	...
Longfellow . . . . .	22.2	15.7	10.5	15.8	8.3	5.8	5.1	7.8	6.4	6.4	3.0	2.4	4.0	0.0	...
Central . . . . .	23.1	17.5	15.8	13.3	5.5	6.1	4.6	0.0	1.5	3.6	4.0	2.4	3.3	0.0	...
Washington . . . . .	22.5	16.3	13.3	13.3	4.7	5.5	3.9	0.0	0.0	3.7	3.7	2.2	3.1	0.0	...
Grade Median . . . . .	23.6	16.5	15.6	13.9	5.3	5.6	4.3	0.0	1.5	3.9	3.8	2.3	3.8	0.0	...

FIFTH GRADES. Total Number Pupils, 171

Whittier . . . . .	26.8	18.3	16.0	15.0	6.8	7.4	5.4	3.7	1.3	3.6	5.3	3.4	4.4	1.2	0.0
Park . . . . .	26.0	16.0	16.7	15.0	5.4	6.0	5.0	2.5	2.2	4.8	5.0	3.6	4.3	1.0	0.0
Garfield . . . . .	26.8	20.0	16.5	17.3	6.6	7.6	5.1	1.7	2.5	3.0	5.0	3.5	4.3	0.0	0.0
Longfellow . . . . .	26.4	19.5	17.0	16.5	6.2	6.6	5.4	8.0	2.6	3.0	5.6	3.8	3.6	1.1	3.0
Central . . . . .	26.5	17.0	16.7	16.7	5.7	6.5	5.1	0.0	1.4	4.0	7.0	2.3	3.6	1.0	2.0
Washington . . . . .	25.0	18.1	16.0	15.5	5.9	7.2	5.1	3.5	1.6	4.3	5.3	3.2	4.5	1.4	2.3
Grade Median . . . . .	26.4	18.4	16.4	15.5	6.1	7.1	5.2	3.7	1.8	4.1	5.5	3.4	4.3	1.1	1.5

SIXTH GRADES. Total Number Pupils, 219

Whittier . . . . .	30.5	20.7	19.2	17.7	6.8	7.4	4.9	0.0	2.6	4.5	6.4	2.9	4.5	1.2	0.0
Park . . . . .	26.7	20.4	17.2	16.5	6.0	8.4	5.6	0.0	2.3	4.9	7.0	4.1	5.1	1.7	3.3
Garfield . . . . .	32.0	22.0	18.8	18.3	6.4	9.0	6.0	0.0	3.6	5.0	9.0	3.8	4.9	1.4	0.0
Longfellow . . . . .	27.0	18.0	16.7	16.7	6.4	7.4	5.6	4.0	3.0	3.5	7.5	2.8	4.5	1.4	2.4
Central . . . . .	28.7	19.5	16.9	18.5	5.9	7.7	5.5	0.0	2.8	4.2	8.1	3.7	3.0	1.9	1.7
Washington . . . . .	27.0	21.0	21.4	19.6	6.7	9.0	6.3	2.0	3.0	4.5	6.7	3.5	5.3	1.7	3.4
Lowell . . . . .	30.2	20.2	16.2	18.5	7.1	9.9	5.9	7.3	3.8	5.1	8.2	4.4	5.2	1.8	2.6
Grade Median . . . . .	28.1	20.6	18.1	17.8	6.5	8.2	6.5	0.0	2.9	4.8	7.4	3.6	4.7	1.8	2.7

SEVENTH GRADES. Total Number Pupils, 231

Park . . . . .	26.0	20.0	16.8	18.0	6.2	8.8	5.8	0.0	3.6	5.1	9.1	5.1	4.9	1.8	3.1
Garfield . . . . .	28.5	20.5	16.8	18.2	6.6	9.8	7.3	4.4	3.7	5.0	9.4	4.0	6.2	2.8	3.8
Longfellow . . . . .	31.0	27.4	21.0	21.4	7.7	10.6	6.6	0.0	4.4	5.0	9.7	5.1	5.4	2.6	3.4
Central . . . . .	26.4	21.5	17.2	19.2	6.4	8.5	5.0	3.2	3.3	4.3	7.8	4.0	3.7	1.7	3.3
Lowell . . . . .	31.0	21.0	18.5	20.0	7.3	10.2	6.4	1.0	4.6	5.2	8.0	4.5	6.1	2.3	2.6
Grade Median . . . . .	26.8	21.0	17.5	19.1	6.7	9.2	6.2	3.5	3.8	5.0	8.0	4.4	5.0	2.0	3.2

TABLE 27 (continued)  
EIGHTH GRADES. Total Number Pupils, 243

Park . . . . .	28.8	20.6	17.7	20.0	6.1	9.4	6.8	0.0	3.2	5.5	8.3	4.6	5.3	2.0	3.0
Garfield . . . . .	32.3	22.8	19.7	20.4	6.7	9.3	7.2	6.2	3.9	6.2	10.1	4.7	5.5	2.1	3.4
Longfellow . . . . .	33.1	26.8	23.9	23.4	7.2	10.6	6.6	10.2	4.4	5.5	10.4	4.8	6.2	2.3	4.5
Central . . . . .	34.4	22.3	20.8	22.5	7.4	9.6	6.2	6.3	3.7	5.2	9.6	4.8	5.3	2.2	3.4
Lowell . . . . .	35.5	28.3	24.4	19.1	7.2	11.2	7.1	6.2	4.7	5.2	11.4	5.1	5.5	2.1	5.1
Grade Median . . . . .	32.4	23.7	21.5	21.8	7.0	9.9	6.7	5.8	4.0	5.4	10.0	4.7	5.8	2.1	3.6

Table 28 shows the ranks attained by each of the seven schools in their sixth grades. The final rank for each school's sixth grade was worked out by adding together the ranks attained by the sixth grade of each school in each set, and considering that school as ranking first the sum of whose ranks was least. Thus the sum of the ranks attained by the sixth grade of the Lowell School was 34, while the sum of the ranks of the Longfellow School's sixth grade was 83. Lowell is given rank 1, and Longfellow, rank 7. By treating the results in all the grades of all the schools in the manner illustrated in Table 28, it was possible to arrive at an approximation of the relative standings of the seven schools where the arithmetic test was given; i.e., Lowell, 1; Longfellow, 2; Garfield, 3; Central, 4; Washington, 5; Whittier, 6; and Park, 7.

TABLE 28

SHOWING RANK ORDER OF SCHOOLS IN EACH SET OF TESTS FOR SIXTH GRADES

Name of School	Sets of Tests															Final Rank
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Whittier . .	2	3	2	5	2	6	7	4	6	5	7	6	5	7	7	(6)
Park . . .	7	4	5	7	7	4	4	7	7	3	5	2	3	4	2	(5)
Garfield . .	1	1	3	4	4	3	2	6	2	2	1	3	4	1	6	(2)
Longfellow	6	7	7	6	5	7	5	2	4	7	4	7	6	6	4	(7)
Central . .	4	6	6	2	6	5	6	5	5	6	3	4	7	2	1	(4)
Washington	5	2	1	1	3	2	1	3	3	4	6	5	1	5	5	(3)
Lowell . .	3	5	4	3	1	1	3	1	1	1	2	1	2	3	3	(1)

*7. Individual Differences*

Figure 20 shows the differences in scores earned by the seventh-grade pupils of the Park School in each set of the arithmetic test. Thus in Set A, the number of examples solved ranged from 13 to 39; in Set B, from 11 to 40; in Set C, from 9 to 30; in Set D, from 4 to 28, etc.

A distribution of scores representing total number of examples solved in the time allowed by each pupil according to the chronological ages of the pupils disclosed the following:

Chronological age:	11 years	12 years	13 years	14 years	15 years
Total No. examples:	149	141	135	123	95

Inasmuch as the 11-year-olds in the seventh grade are accelerated, and the 15-year-olds are retarded, for that grade, it appears that individual differences within a given grade are primarily due to differences in native ability rather than to differences in training.

This idea is further illustrated in Table 29, which gives in detail the scores made by the pupils solving the greatest and least number of examples in the seventh grade of the Park School. Here it appears that a girl 12 years, 11 months of age solved 225 examples in 22 minutes of working time, or 10.2 examples per minute, while a boy 15 years and 1 month of age, repeating the 7B grade, solved 78 examples in 22 minutes working time, or 3.5 examples per minute.

Figure 21, where the two scores just referred to are shown with reference to the city median scores for the seventh grade, shows how wide apart these two pupils were in every set of examples except Set 1, where they both made a score of 2 examples correctly solved. The scores of the lowest pupil correspond almost exactly to the median scores for the fourth grade, while the scores of the highest pupil are equal to or above the medians for the eighth grade, except in Set I. Here, then, are pupils in the same school grade who are fully four grades apart in arithmetical ability.

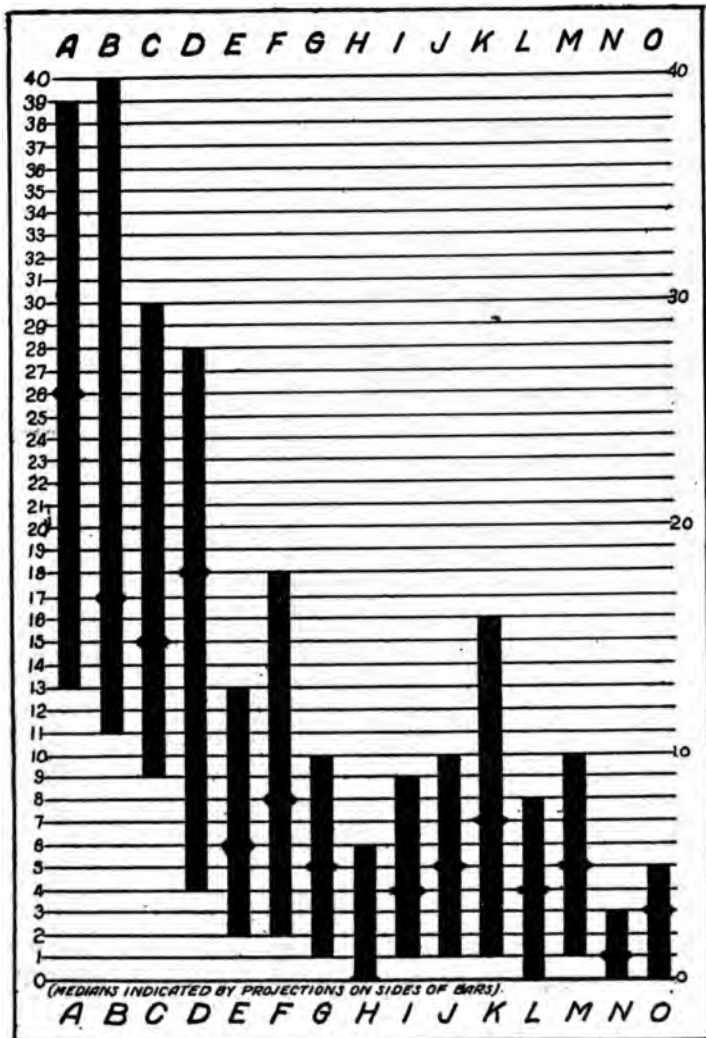


FIG. 20. INDIVIDUAL DIFFERENCES OF 31 7B PUPILS IN PARK SCHOOL, SHOWING LOWEST AND HIGHEST SCORES MADE IN EACH SET

TABLE 29  
SHOWING INDIVIDUAL DIFFERENCES WITHIN THE SEVENTH GRADE  
PARK SCHOOL

	Sets of Tests															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Highest 7th Grade Score	37	40	26	28	9	17	10	5	2	8	16	8	10	4	5	
City Medians for 7th Grade	26.8	21.0	17.5	19.1	6.7	9.2	6.2	3.5	3.8	5.0	8.0	4.4	5.0	2.0	3.2	
Lowest 7th Grade Score	20	15	9	12	2	5	4	0	2	0	4	2	2	0	1	

Total number of examples solved in time allowed by highest pupil, 225  
 " " " " " " " " " lowest " 78

Age of pupil making highest score, 12 yrs., 11 months; grade, high 7th  
 " " " " lowest " 15 " 1 " " low 7th

The existence of such individual differences as have just been discussed suggests the necessity for a more scientific system of grading and classification than is to be found in the majority of our school systems. The use of intelligence tests as a basis for classifying and grading pupils according to ability would undoubtedly be one of the features of such an improved system. An immediate need for ungraded rooms for special cases like these is obvious.

### 8. Accuracy

In all the preceding tables medians have been based on the number of examples correctly solved and no account has been taken of "attempts." A few words should be said regarding the relation between "attempts" and "rights." As a means of illustrating this relationship the median number of "attempts" and the median number of "rights" for each

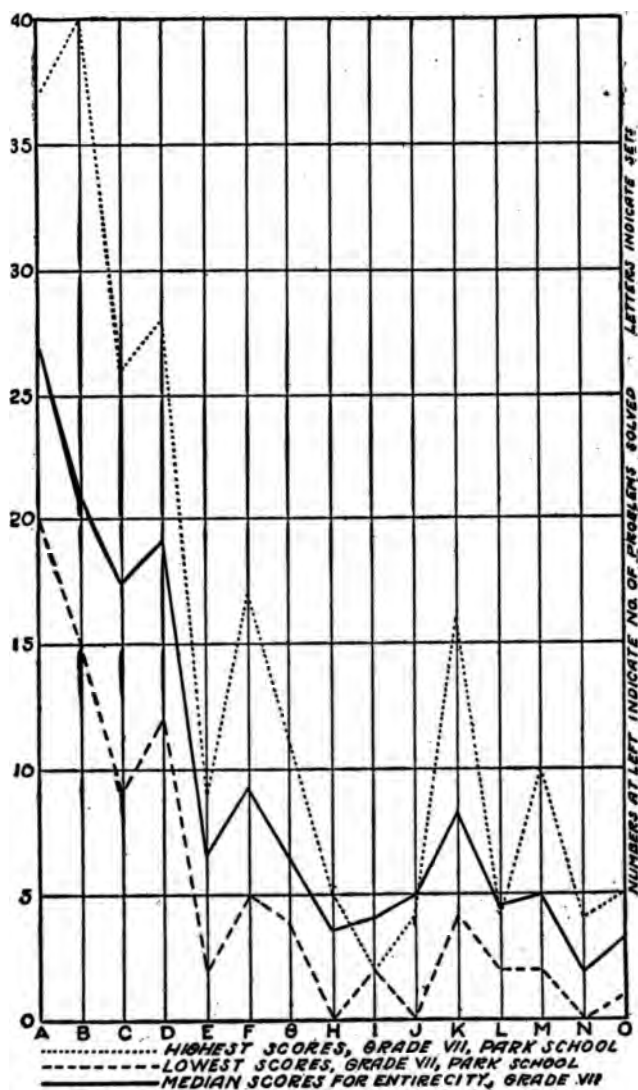


FIG. 21. COMPARING LOWEST AND HIGHEST 7th-Grade Score in the Park School with City Median



grade in Sets M and O in three schools where tests were given to all grades from fourth to eighth inclusive, were worked out. The results are shown in Figure 22.

In the fundamental operations, represented by Set M, the percentage of accuracy is very much higher for all the grades than in the complex operations, represented by Set O. For Set M the percentage of accuracy ranges from 68.0 to 78.4, while in Set O the range of accuracy is from 15.0 per cent in the fifth grade to 40.6 per cent in the eighth grade. Since success in solving problems involving fractions seems to depend more on "knowing how" than on routine drill, the maturity of the pupils is a fundamental item to be taken into account in teaching methods and organization of subject matter in arithmetic. There would probably be no appreciable loss in ability to handle fractions in the eighth

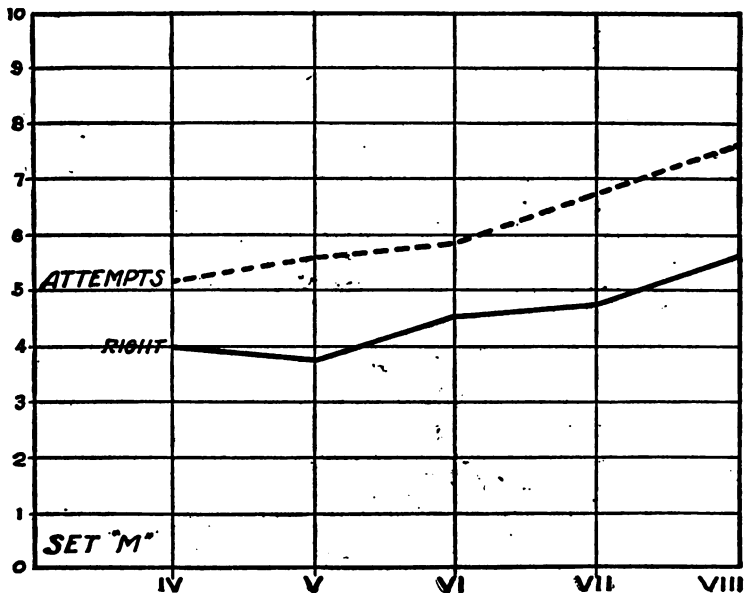


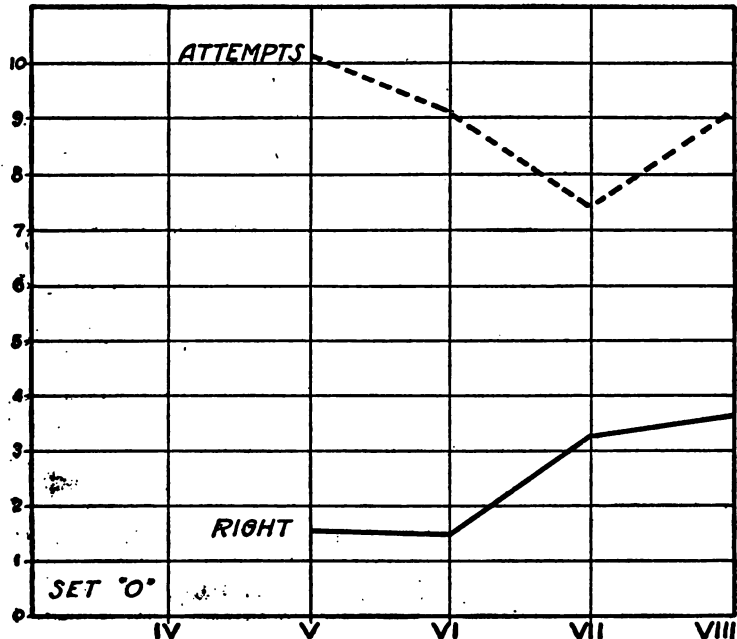
FIG. 22. SHOWING THE MEDIAN NUMBER OF "ATTEMPTS" AND THE MEDIAN NUM-

grade if their introduction into the courses in arithmetic should be postponed until the beginning of the sixth grade.

**SUMMARY**

1. The general record of Boise in the arithmetic test when compared to that of other cities where the same test has been applied is very good, the most important exceptions being in Sets H and O, which deal with fractions.

2. The differences that exist between schools as shown by their records in the arithmetic test point to the necessity of using standard rather than local tests in determining the



BER OF "RIGHTS" FOR EACH GRADE IN SETS M AND O IN THREE SCHOOLS

efficiency of teaching methods. The results of such tests should be carefully studied by individual teachers and supervisors, with a view to revising and improving their own classroom procedure in arithmetic.

3. The uneven results secured in the tests involving fractions suggest the necessity for improvement in the technique of handling that phase of the study of arithmetic, and also the possibility of postponing the introduction of fractions until the 5A or 6B grades.

4. The intimate connection between native endowment and success in the complicated operations of arithmetic emphasizes the necessity for the use of psychological tests as an aid in the more scientific grading and classification of the pupils in our public schools.

#### RECOMMENDATIONS

Chapter IV described Boise's curriculum and indicated the time cost of the various subjects. The results of tests here reported indicate the extent of Boise's success in teaching three different subjects and at the same time bring to light the weak and strong points in these three lines of instruction. The suggestions are obvious, that these subjects are not properly supervised; that no common aim dominates the instruction in the various classrooms; and that the time cost of these results has not been properly considered. In fact, when Grade 8 in one school makes a score of 68 in spelling, while in another school the same grade makes 83, one must conclude that the term "grade" has little meaning in practice.

It is accordingly recommended that more real supervision of instruction be provided for; that teachers and supervisors carry on studies similar to those here reported, to the end that the grade and class organization of the schools shall be thoroughly checked up; that some kind of special classes be provided for handling the many pupils who are so far below standard; that special attention also

be given to the children who are so much above standard; that the content of the curriculum be thoroughly revised and reorganized; and finally that serious consideration be given to the relation of time allotment to results achieved in the classroom.

## CHAPTER VI

### PROGRESS OF THE CHILDREN IN THE SCHOOLS

(*Williams*)

#### THE DISTRIBUTION OF THE PUPILS

**L**IKE most other cities, the schools of Boise group the pupils in the elementary schools into sixteen grades, each of which represents a half-year's work. The efficiency of the schools in holding pupils through this series of grades is indicated in a general way by the relative enrollment as we pass up the scale from the first grade to the high school. The holding power of the Boise schools is more effective than in most cities, as evidenced by the fact that while the entering class contains 199 pupils, there are 145 pupils completing the last work preparatory to entering high school. This maintenance of an even enrollment is a highly commendable feature of the school system, and is complimentary to the community. Figure 23 shows the percentages of the city's children who are retarded, at age, and accelerated, respectively.

The distribution of the pupils by ages and grades is shown in Table 30. This table includes 2502 pupils, representing the enrollment in May, 1919, compiled from data furnished by the teachers. The heavy lines running diagonally down the table, from left to right, enclose the numbers which represent pupils who are "at age," meaning that they are in the grade in which they should be expected to be, according to commonly accepted age-grade standards. These pupils may be said to be making normal progress, in so far as their rate of progress can be inferred from their present location. This group includes, for the first grade, all the

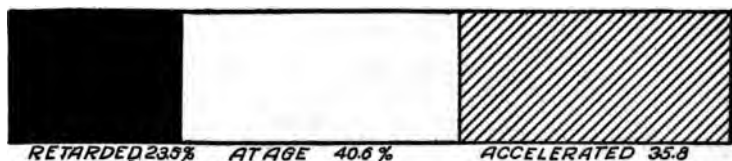


FIG. 23. EXTENT OF ACCELERATION, NORMAL PROGRESS, AND RETARDATION IN BOISE SCHOOLS IN MAY, 1919

pupils who are between  $6\frac{1}{2}$  and 8 years of age; for the second grade, those who are between  $7\frac{1}{2}$  and 9 years, etc. It assumes the entering of school at about 7 and completing the grades during the fourteenth year. The "at age" group contains 1012 pupils, or about 40 per cent of the entire enrollment. This would suggest that the standard is fair, and that it can be closely followed by most of the pupils, according to the present standards of instruction and promotion.

#### ACCELERATED PUPILS

The numbers above the diagonal lines in Table 30 represent the pupils who are beyond the grades in which the expectations would place them, for their ages. This group includes 894 pupils, or nearly 36 per cent of the entire enrollment. The extent of the acceleration is indicated by the distance above the upper diagonal line. Thus the child who is represented as being in the second half of the first grade at less than six years of age, is advanced two years beyond those in the same grade who are just making the expected progress. Six pupils are completing the latter half of the eighth grade at twelve years, which also represents two years' acceleration. Most of the rapid group, however, are but slightly above the normal-progress lines, and it will be seen that no pupil is advanced more than two years. From Table 31 it is evident that the tendency to be two years advanced increases toward the eighth grade, while the tendency to be one year advanced decreases.

It appears that these pupils are accelerated not by reason of the accident of entering school earlier than the other

TABLE 30

AGE-GRADE DISTRIBUTION IN BOISE PUBLIC SCHOOLS, MAY, 1919

Ages of Pupils in Years and Months	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Tot.
	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	
Under 5 Years	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5-0 to 5-5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5-6 to 5-11	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
6-0 to 6-5	46	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	57
6-6 to 6-11	74	52	5	...	...	...	...	...	...	...	...	...	...	...	...	...	131
7-0 to 7-5	43	53	32	12	...	...	...	...	...	...	...	...	...	...	...	...	140
7-6 to 7-11	18	27	34	57	15	4	1	...	...	...	...	...	...	...	...	...	156
8-0 to 8-5	8	24	30	45	28	8	...	1	...	...	...	...	...	...	...	...	144
8-6 to 8-11	5	1	9	23	42	43	13	3	1	...	...	...	...	...	...	...	140
9-0 to 9-5	3	9	5	16	20	49	39	24	4	2	...	...	...	...	...	...	171
9-6 to 9-11	1	1	3	3	19	33	31	34	18	5	1	...	...	...	...	...	149
10-0 to 10-5	...	2	1	5	9	18	26	36	33	24	5	1	...	...	...	...	160
10-6 to 10-11	...	1	2	3	4	8	17	23	28	41	15	7	...	...	...	...	149
11-0 to 11-5	1	...	1	1	2	8	16	23	40	26	18	9	...	...	...	...	148
11-6 to 11-11	...	...	...	...	4	7	11	20	41	28	28	15	7	...	...	...	161
12-0 to 12-5	...	...	...	...	1	1	5	10	9	12	21	31	28	17	10	6	151
12-6 to 12-11	...	1	...	...	2	1	1	5	11	18	23	20	62	15	5	...	164
13-0 to 13-5	...	...	...	...	...	1	4	3	6	11	17	28	31	17	8	...	126
13-6 to 13-11	...	...	...	...	...	2	1	2	2	7	8	14	10	24	37	...	116
14-0 to 14-5	...	...	...	...	...	2	...	1	2	3	5	5	27	14	25	...	84
14-6 to 14-11	...	...	...	...	...	...	1	1	...	4	8	6	16	27	...	...	63
15-0 to 15-5	...	...	...	...	...	...	...	1	...	1	2	5	6	6	8	...	46
15-6 to 15-11	...	...	...	...	...	...	...	...	...	2	1	2	6	10	13	...	34
16-0 to 16-5	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	7
16-6 to 16-11	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2
17-0 to 17-5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17-6 to 17-11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18-0 to 18-5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18-6 to 18-11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19-0 to 19-5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19-6 to 19-11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20 and over	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	199	183	121	165	139	172	153	169	148	187	139	149	137	182	114	145	2502
Accelerated	46	64	37	69	43	55	53	62	56	72	47	54	52	86	42	56	894
At age	117	80	64	68	62	82	57	59	51	81	49	54	48	50	38	52	1012
Retarded	36	39	20	28	34	35	43	48	41	34	43	41	37	46	34	37	596

pupils, but because they have been found capable of more advanced work than most of the children of the same age.

TABLE 31

EXTENT OF ACCELERATION AND RETARDATION BY GRADES

	1	2	3	4	5	6	7	8	Total
Accelerated 2 Years.	1	...	4	5	12	14	16	21	73
Accelerated 1 Year .	109	106	94	110	116	87	122	77	821
At Age . . . . .	197	132	144	116	132	103	98	90	1012
Retarded 1 Year . .	51	33	54	55	52	54	52	54	405
Retarded 2 Years .	18	12	11	23	16	19	26	16	141
Retarded 3 Years .	4	3	4	7	5	8	4	1	36
Retarded 4 Years .	1	...	...	5	2	2	1	..	11
Retarded 5 Years .	1	...	...	1	...	1	...	..	3
Totals . . . . .	382	286	311	322	325	288	319	259	2502

They have been permitted to "skip" grades, or to be promoted into a higher grade before the usual promotion time. They thus become a valuable asset to the schools and to the community, not only because of their superior ability, but because the schools have recognized this ability and have given it an opportunity for expression where it can operate most effectively.

Some of the most important developments in public education in recent years have been founded upon the variability of children of the same age. The promotion of pupils according to their capacities is a commendable practice, and should be further encouraged. If a child is capable of completing the eight years of work in six years, it is to his advantage and to the advantage of the schools that he be permitted and encouraged to do so. The promotion of pupils on the basis of intelligence tests, as suggested in another chapter of this report, will serve to bring about a better distribution through the grades.



## RETARDED PUPILS

Referring again to the age-grade distribution table (30), the numbers below the diagonal lines represent the pupils who are behind their class in point of age. The extent of the deviation from the normal section represents the degree of retardation, each space in the vertical columns representing a half-year. For example, the two pupils in Grade 3A who are more than  $12\frac{1}{2}$  years of age are three years retarded, being six spaces removed from the 82 children who are of the normal age for that grade.

In the amount of retardation Boise ranks high in comparison with other cities. Figure 24, in which a number of American cities are compared, shows the position of Boise in this respect. In most cities it has been found that about one third of the pupils are retarded. In Boise the proportion is 23.5 per cent, or less than one fourth. In some communities as many as one half of the pupils are retarded, but in most western cities steps have been taken in recent years to bring these laggards up to grade and thus to reduce the amount of retardation, with its undesirable consequences.

## EXTENT OF RETARDATION

It will be seen from the accompanying tables that retardation is common to all the grades. It increases up to

TABLE 32

## NUMBER AND PERCENTAGE OF RETARDED PUPILS BY GRADES

	1	2	3	4	5	6	7	8	Total
Total Enrollment . .	382	286	311	322	335	288	319	259	2502
Number Retarded . .	75	48	69	91	75	84	83	71	596
Per Cent Retarded . .	19.6	16.8	22.2	28.2	22.4	29.2	26.0	27.0	23.5

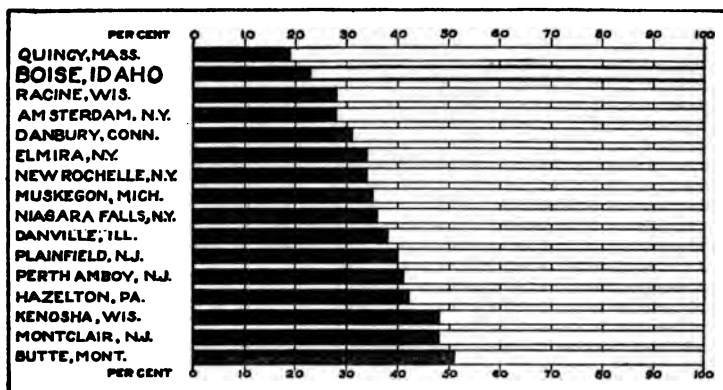


FIG. 24. RETARDATION IN AMERICAN CITIES

the sixth grade, and thereafter falls off slightly, probably on account of the dropping out of retarded pupils in the upper grades. The smallest proportions, as might be expected, are found in the first two grades.

Tables 31 and 32 summarize, by grades, the *extent* of retardation and acceleration. While the amount of retardation is in part compensated by the amount of acceleration, each expressed in gross quantities, it should be noted that the extent of the downward distribution is greater than that of the upward distribution. The greater proportion of each group deviates but one year from the limit of normal progress; and while only 8 per cent of the rapid group are accelerated more than one year, 32 *per cent* of the slow group are *retarded* more than one year. This fact should be taken into consideration in any comparison of age-grade statistics. The number of accelerated, normal and retarded pupils is shown by schools, by grades and for the city as a whole in Table 33.

#### RESULTS OF RETARDATION

If the pupils of any classroom in Boise should be stood in a line, arranged in order of age, from the youngest to the old-

TABLE 33

ACCELERATION, NORMAL PROGRESS, AND RETARDATION BY WHOLE  
GRADES AND BY SCHOOLS

## Accelerated Group

	1	2	3	4	5	6	7	8	Total
Central . . . . .	10	14	10	9	14	14	51	38	160
Garfield . . . . .	13	11	9	8	15	7	7	10	80
Hawthorne . . . . .	6	4	6	3	5	..	..	..	24
Lincoln . . . . .	13	12	5	14	9	14	..	..	67
Longfellow . . . . .	18	17	15	19	24	8	40	19	160
Lowell . . . . .	11	11	6	11	15	10	16	12	92
Park . . . . .	9	6	18	19	21	22	24	19	138
Washington . . . . .	8	17	10	17	14	17	..	..	83
Whittier . . . . .	22	14	19	15	11	9	..	..	90
Totals . . . . .	110	106	98	115	128	101	130	98	894

## Normal Progress Group

	1	2	3	4	5	6	7	8	Total
Central . . . . .	16	16	15	13	17	12	20	29	138
Garfield . . . . .	23	13	14	10	14	19	9	9	111
Hawthorne . . . . .	15	10	11	9	6	..	..	..	51
Lincoln . . . . .	14	7	12	7	7	9	..	..	56
Longfellow . . . . .	26	16	19	20	26	19	21	24	171
Lowell . . . . .	14	14	18	13	10	8	21	18	116
Park . . . . .	34	17	18	25	18	18	27	10	167
Washington . . . . .	34	23	23	9	17	5	..	..	111
Whittier . . . . .	21	16	14	10	17	13	..	..	91
Totals . . . . .	197	132	144	116	132	103	98	90	1012

TABLE 33 (continued)

Retarded Group

	1	2	3	4	5	6	7	8	Total
Central . . . . .	10	..	3	10	6	8	22	13	72
Garfield . . . . .	8	4	5	14	10	6	9	12	68
Hawthorne . . . . .	6	4	3	13	8	..	..	..	34
Lincoln . . . . .	4	6	6	7	8	12	..	..	43
Longfellow . . . . .	11	5	6	9	8	14	27	17	97
Lowell . . . . .	5	5	8	7	8	4	7	10	54
Park . . . . .	19	12	16	13	14	19	18	19	130
Washington. . . . .	8	9	15	13	12	17	..	..	74
Whittier . . . . .	4	3	7	5	1	4	..	..	24
Totals . . . . .	75	48	69	91	75	84	83	71	596

All Schools

	1	2	3	4	5	6	7	8	Total
Accelerated . . . . .	110	106	98	115	128	101	138	98	894
Normal Progress . . .	197	132	144	116	132	103	98	90	1012
Retarded . . . . .	75	48	69	91	75	84	83	71	596
Total . . . . .	382	286	311	322	335	288	319	259	2502

est, and each decorated with a placard indicating his age, some of the difficulties of group instruction would be indicated to any observer. A class of 7A pupils, for example, might include pupils all the way from 10 to 17 years of age — a range nearly equal to the span covered by the entire elementary school course. In some cases, as is pointed out in another chapter, the mental capacity range in single classrooms is nearly as great.

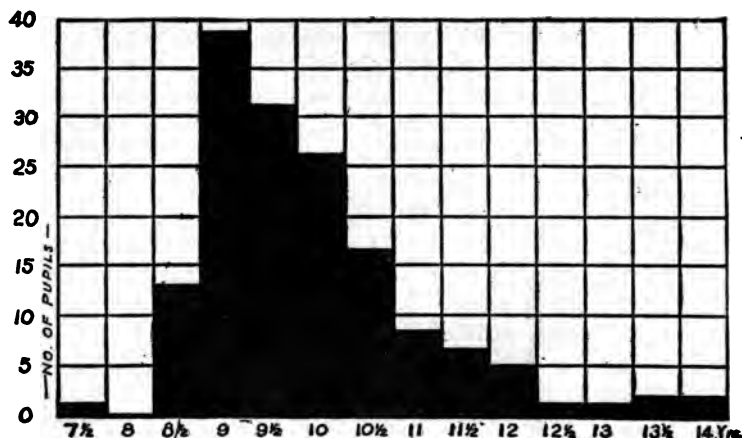


FIG. 25. AGE DISTRIBUTION OF PUPILS IN GRADE 4B

In Figure 25 the age-range of pupils in Grade 4B is shown graphically. The youngest pupil is  $7\frac{1}{2}$ ; the oldest is 14. While this is not a single room, it nevertheless represents the range of ages among the pupils in Boise who are doing the same kind of work, and within the same period of time. The pupils to the left of the chart, up to 9 years of age, are young for their class. The pupils to the right, above 10 years of age, are over-age for their class. Many of these older pupils are doubtless repeating the work, some of them for the second or third time. Others are merely behind in their progress due to sickness or other causes. Others are behind simply because they lack the capacity to do the work.

Whatever the reasons for this wide distribution, the effects are noticeable throughout the schools. Large, overgrown pupils are in association with younger pupils. This is not necessarily an undesirable condition, but it would work better for social advancement if pupils of equal ability and equal experience associated in their work. Backward pupils often carry an attitude of indifference, which is psychologically bad for the school. The bringing of retarded pupils

up to grade constitutes a definite social and educational contribution on the part of the teacher who accomplishes the act. This refers, of course, to the actual improvement of the pupil, and not merely to passing him along to the next grade irrespective of his achievements.

A still more important result of retardation and slow progress is the loss of pupils from the schools because of discouragement. Many pupils drop out of school at the sixth or seventh grade. The reason given is usually one more justifiable than discouragement, yet it is evident in many cases that the pupil would have continued in school had he felt the encouragement of success. The present value placed on education in every line of practical endeavor makes it an urgent duty of the schools to carry all pupils as far as their mental capacity permits. The school should be made more attractive than the competing offers from the commercial world.

#### CAUSES OF RETARDATION

Probably the most common cause of school retardation is retarded mental development. There are often other accompanying conditions, some of which may appear to be the immediate cause. If a mentally retarded boy is also physically handicapped, the physical defect, because it is more easily observed, is likely to be assigned as the cause. Investigations with intelligence tests among public school children have shown that pupils can do successfully only work which is within the limits of their intelligence. Sixth-grade work, for example, which requires approximately twelve-year intelligence, cannot be done well by a child whose mental development is but ten years.

Among the "laggards" shown in the age-grade table, and especially among the more seriously retarded pupils, will be found many who are really up to grade if their mental ages were used as the basis of reckoning. On the other hand, among this same group of laggards may be found some who are really capable of doing the work of a higher grade,

but who are being held back merely for the sake of the formal requirements of the school.

A recent investigation by Dr. Lewis M. Terman<sup>1</sup> found that children who are in grades corresponding to their mental ages are doing work of an average quality. The standards for mental age-grade classification are approximately the same as the basis on which we have calculated the age-grade distribution for the Boise schools. Where children fall below these mental standards, they are usually found to be incapable of doing the work of their normal classmates, without special individual instruction. Dr. Terman also found that an equal injustice was being worked to children who are held back below the grade indicated by their intelligence. The promotion of pupils on the basis of mental age is likely to become the practice of the public schools of the future.

Physical conditions also may cause retardation. Eye, ear, nose, and throat trouble, decayed teeth, etc., frequently prevent the normal expression of intelligence as applied to school work. A very large proportion of physical defects is found among retarded children. While there is a tendency to overestimate the effect of these conditions on school work, especially where low intelligence also is involved, it is no less important that all remediable defects receive the attention of the school authorities.

Another cause often given for retardation is poor home conditions. Incompetent or indifferent parents, weak supervision, crowded or insanitary living quarters, poverty, etc., cannot contribute much to the advancement of the children. In some cases the children are called upon to help support the family. Frequently sickness and disease prevent regular attendance. In many cases the quality of the home reflects the intelligence of the family. These facts may not be so much the cause of retardation as an accompanying consequence of some social cause lying further back.

<sup>1</sup> Terman, Lewis M., *The Intelligence of School Children*. Houghton Mifflin Company, Boston, 1919.

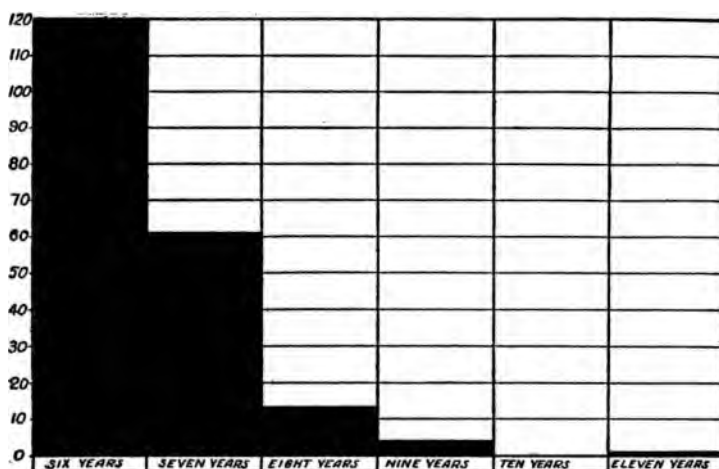


FIG. 26. AGES OF CHILDREN ENROLLED IN BEGINNING CLASSES OF BOISE SCHOOLS

It is surprising how little the schools know about the home conditions of the pupils, and of the relation between these conditions and school progress. The bringing of the home and the school into closer relationship cannot fail to help in correcting the bad effects of retardation.

Late entering of school does not appear to have been a serious factor in causing retardation in Boise. The distribution of ages indicated by Figure 26 for the entering grade indicates that nearly all the children begin school early enough to allow for their continuance within the normal age limits through the grades. The eight, nine, and eleven-year-old pupils in the beginning classes are for the most part pupils who have entered at the usual age, but who have failed to pass.

#### SUMMARY

The age-grade distribution suggests that Boise occupies a high place among American cities with reference to the grading of pupils by age. The proportion of retardation is



23.5 per cent of the enrollment. This retardation, although of relatively small proportion, extends into 1-, 2-, 3-, 4-, and 5-year groups. The effect of seriously over-age pupils is detrimental to the progress of the schools. There are many causes for retardation, chief among which is the wide variability of children in mental capacity. The schools should inquire into the specific causes for individual cases, in order that a proper grading and classification of pupils may be maintained.

## CHAPTER VII

### INDIVIDUAL DIFFERENCES AMONG THE CHILDREN

(*Williams*)

#### THE VARIABILITY OF CHILDREN

**I**T is evident that the present organization of the public schools implies an abundance of faith in the age of a given child as the basis upon which his education is to proceed. It happens, fortunately enough, that the use of this basis is not incorrect, scientifically. Recent psychological investigations have shown that mental and physical development proceed, in the main, with age. The average child of eleven years is physically and mentally ten per cent in advance of the average child of ten years. Every year of age adds a year of physical growth and intelligence to the strictly normal child. Thus when children are grouped together by ages, as they are in the schools, they are also grouped, roughly, into comparable divisions as regards natural development.

The unfortunate feature of this grouping is that the child who happens to be different from the other children of his age is required to suffer the consequences of being incorrectly placed. They are the "misfits" of the existing system. Yet the schools exist for these children as well as for the great majority who are more nearly alike. It is not within the power of most of these exceptional children to adjust themselves to the system, nor is it proper that they should be made to do so if they could. Such children are found in all the grades of the Boise schools, and may have been pointed out by their teachers as special problems which cannot be effectively met by the regular school procedure. It is the purpose of this chapter to indicate the extent and

significance of these cases, and to make some suggestions for adjusting the schools to meet individual needs.

#### MENTAL DIFFERENCES

A blank was submitted to all of the teachers, on which they were asked to indicate the intelligence of each pupil, classifying them into five groups. The intelligence groups were named and defined as follows:

*Feeble-minded.* Incapable of profiting normally from public school instruction. Will not develop mentally above the average child of twelve years.

*Backward.* Mentally dull, below normal, but not feeble-minded. With special help could receive much benefit from regular instruction.

*Average.* Equal to the average child of the same age.

*Superior.* Noticeably above average, among the brightest 20 per cent of the population.

*Very superior.* Among the brightest 3 or 4 per cent of the population.

Each teacher was requested to list all the pupils in her room, and to indicate her classification of each child. Table 34 is a summary of the data obtained from all schools by grades.

As expected, more than one half of the pupils were classified as average, and all but a very few placed in the adjacent groups. The feeble-minded group includes 18 pupils, and the very superior group 43 pupils. These proportions were generally found in the classifications by individual teachers, and we are led to the belief that the terms were interpreted similarly throughout the schools. A few teachers who reported no mental differences among the pupils, making them all "average" or "superior," evidently interpreted the classification quite differently from the other teachers. The number of such cases was too small, however, seriously to affect the general classification.

#### INTELLIGENCE TESTING

The mental differences revealed by the teachers' classifications, significant as they are, merely suggest the still more

TABLE 34

TEACHERS' ESTIMATES OF INTELLIGENCE, BY GRADES

Grade	Feeble-minded	Backward	Average	Superior	Very Superior
1. . . . .	2	72	256	31	3
2. . . . .	..	49	199	38	5
3. . . . .	7	42	201	40	10
4. . . . .	3	42	222	38	5
5. . . . .	2	44	242	43	4
6. . . . .	4	49	202	35	2
7. . . . .	..	54	234	36	3
8. . . . .	..	25	160	44	11
Total . . .	18	377	1716	305	43

important differences which are brought out by tests of intelligence. The science of education is progressing so rapidly that the school may well seek the most accurate and finely graded information it is possible to obtain for each child. We measure the length, volume, and weight of physical substances; we measure water, light, electricity, gas, air pressure, temperature, rate of travel, and many other things because by their measurement and evaluation we are enabled to use them more effectively and thus contribute to more efficient living. For the same reasons it is desirable to learn as much as possible about the intelligence of school children — intelligence being the most important single factor in their school achievement and life success.

The measurement of intelligence has been reduced to such simple terms that it is within the range of all schools. The Binet-Simon Scale, a series of tests for this purpose, should be applied in all cases where decisions are necessary as to the mental capacity of children. It would be still more

desirable to have intelligence tests made regularly of all the pupils entering the schools. So much depends upon intelligence that the neglect of this important factor has handicapped the education of many children. It would be a wise undertaking to have tests made of all pupils in the schools and to establish standards of classification and promotion upon the basis of the results obtained.<sup>1</sup>

#### SUPERIOR CHILDREN

According to the classification made by the teachers, 348 pupils, or about 15 per cent of the enrollment, are of superior intelligence. Of this number 43 pupils were classified as "very superior," their intelligence being so marked as to place them "among the brightest 3 or 4 per cent of the population." Allowing for minor errors of judgment, there is good reason to believe that these estimates represent as true an account of the facts in Boise as it would be possible to obtain without extensive psychological testing.

These superior children are distributed throughout the city, each school and each grade having its quota. The majority of them are accelerated in their school progress — i. e., are in grades beyond average pupils of the same age. This accounts, in part, for the acceleration shown in the age-grade table. Some of them, however, are not accelerated, but are being held in the grades indicated by their ages. In some cases there is actual retardation of pupils classified as "superior" by their teachers.

There are several reasons why some children of superior intelligence do not progress more rapidly in school. In some instances sickness or physical ailment has prevented regular application to school work. In some cases the pupils are "making up" work lost through absence or transfer. There

<sup>1</sup> Time did not permit the extensive use of intelligence tests during the survey, although a few demonstration tests were made. Two recent books by Dr. Lewis M. Terman, entitled *The Measurement of Intelligence* and *The Intelligence of School Children*, are highly recommended to those who wish to acquaint themselves with this work.

are some superior children, as there are children of all other degrees of intelligence, who do not try to apply themselves to the fullest extent of their intelligence. Frequently parents object to the promotion of their children more rapidly than the traditional rate. Another reason, perhaps the most serious of all, is the failure of the schools to recognize superior mental capacity, and to assign pupils to the grades which are best suited to their intelligence.

Superior children contribute a valuable asset to the school system and to the community. Recent investigations have shown that intelligence is a fairly constant factor throughout the growing period, and that bright children retain their brightness and become bright adults. The histories of many of our most brilliant men and women reveal the fact that they indicated their superiority when they were school children. Since it is the obligation of the schools to serve the community as effectively as possible, it should be considered a prime duty to provide educational opportunities commensurate with the intelligence of each child. Among the superior children in the Boise schools are some who will be classed among our leaders, and even perhaps among our geniuses, of the future.

If the promotion is justified by actual measurements of intelligence, there is no reason why superior children should not be advanced as rapidly as their intelligence is developing. In some cases this will mean advancing them until they are two, three, or even four grades ahead of other children of the same age. Parents are sometimes reluctant to agree to rapid promotion, fearing that the child's health will be injured by overcrowding his mind. There is, of course, grave danger of pushing any child to the point of extreme taxation of his mental processes. Overworking the mind is even more serious than overworking the body. It should be remembered, however, that a child of eight with a mental development of ten years is mentally equal to the average child two years older than himself. It is not a mental burden for such a child to do the work of ten-year-olds. In

fact, it may be much more in keeping with his normal performance ability to advance him, than to keep him with the eight-year-olds, who are mentally two years his inferior. The safety valve is the psychological test in the hands of a qualified person.

#### OPPORTUNITY CLASSES FOR GIFTED CHILDREN

The "skipping" of superior pupils through a series of inflexible grades, while better for them than being made to adhere to a system which prevents the normal expression of their intelligence, should be considered but a temporary expedient. The "opportunity class" for very bright children has now passed the stage of experimentation. Such classes have several advantages over the skipping system. Some of these, enumerated by Dr. Terman, are as follows:

- (1) They allow children to make rapid progress without skipping vital parts of the subject matter;
- (2) They allow a broadening and enriching of the course of study because of the larger accomplishments possible to superior minds;
- (3) They are a discouragement to vanity because the level of competition is raised and the measure of a child's success depends upon his relative standing in the class;
- (4) They insure the mental and moral training which can come only from sustained effort;
- (5) They furnish an atmosphere which is intellectually much more stimulating than that found in the average class;
- (6) Since they bring together children of similar age and attainments, they go far to solve the problem of social adjustment.

A trial class of this kind in Boise would doubtless meet with success no less surprising than has been obtained in other cities.

#### BACKWARD CHILDREN

About 16 per cent of the enrollment, 377 individual pupils, were listed by their teachers in the "backward" group. According to the instructions given, this classification includes those who are mentally dull, but not feeble-minded. It was implied that teachers should not list pupils as backward who

were merely retarded in their school work, but only those who were slightly subnormal in mental capacity.

"Backward" is such a vague term as it is used in schools that any group of pupils so designated is likely to contain all kinds of pupils. A few years ago the writer gave intelligence tests to groups of "backward" pupils in several California cities, and found intelligence quotients ranging from 50 to 108, from feeble-mindedness to superior intelligence. It is not improbable that tests applied to the 377 "backward" pupils of Boise would reveal a similar range of intelligence.

One reason for such a liberal use of the term "backward" is the tendency for teachers frequently to mistake backwardness in school subjects for mental weakness. While nearly all mentally dull children do have difficulty with their studies, there are also some normal and even superior children who fail for causes where lack of capacity is not involved. Another reason is the reluctance of some teachers to use the term "feeble-minded" to describe children in whom they recognize symptoms of serious mental weakness. The use of intelligence tests as a basis for classification would prevent many of the errors now made in classifying pupils.

Although there are many degrees of backwardness, we may roughly classify backward pupils into three groups: (1) those who are mentally normal, or nearly so, but whose dullness is expressed by lagging in one or two school subjects; (2) those who are mentally like the group just mentioned, but whose dullness is indicated by a rather consistent lagging in nearly all school subjects; and (3) those in whom actual subnormality of the mental processes is the obvious condition, rather than merely failure in school subjects. It is emphasized that all these groups are limited to pupils who are above the level of feeble-mindedness.

#### BATAVIA TEACHING FOR BACKWARD PUPILS

For the first two groups the plan of special instruction,



without segregating in permanent special classes, has met with success in many cities. Several methods for this group have been devised, all of them being based chiefly on what is known as the "Batavia plan." By this plan several teachers, especially skilled in the teaching of individual school subjects, and with special training and experience with backward children, gather the pupils from the different rooms for special drilling in one subject at a time. The first period, for example, may be devoted to arithmetic. At this time the teachers send to the Batavia room all the pupils who have recently fallen behind in arithmetic. The class will be made up of pupils from several different grades, but the time will be devoted exclusively to helping each pupil with the work which he has failed to get from the regular class. At the end of the period the pupils pass back to their rooms, and a period is given in the Batavia room to the teaching of another subject. Any individual pupil may be sent into this room once, twice, or for a week, two weeks, or as long a time as may be required. The supposition is that if the pupil has the necessary intelligence he will soon be caught up with his class and continue under his regular teacher. If he lacks the capacity to do the work, even with special help of this kind, he may be placed in a lower grade or transferred to a special class. Skillful and energetic Batavia teachers, with the supervision of a good principal, may exert much influence among the pupils of a school and materially reduce the amount of retardation. The plan merits a liberal trial in Boise.

#### SPECIAL CLASSES FOR BACKWARD PUPILS

Pupils of the third group, those whose essential condition is subnormality, should neither be demoted nor should they be permitted to clog the Batavia classes. Achievement in the school subjects does not increase mental capacity, and there is much in the usual school curriculum of the upper grades that is best not taught to children bordering on men-

tal deficiency. Such pupils need a special curriculum adapted to their intellectual development. This does not mean intensive drilling on reading, writing, arithmetic, etc., as in the Batavia rooms, but work which may be of an entirely different sort from that of the regular grades.

The essential aim of education for all children, normal and subnormal, should be training for the practical adjustments of life. Whether or not the present curriculum succeeds in doing this for normal children, it cannot be expected to function with children who do not have intelligence enough to grasp it, or to use it effectively after leaving school. The subnormal child should be trained specifically in meeting the problems of the world in which he is to live. While some occupations require a high degree of intelligence, there are many in which persons of subnormal development can successfully compete, if properly trained and intelligently guided. In these occupations reliance is placed chiefly on manual skill. In shops, factories, and stores where efficient supervision is provided there are hundreds of persons of subnormal intelligence attaining success and living sober, industrious lives through the encouragement afforded by their vocational achievement. It is children for whom we can anticipate such careers that special classes should be formed in the Boise schools.

The special classes should be under the direction of special teachers, professionally trained in the teaching of backward children. Some teachers now engaged in regular classroom work may be developed for this special service. They should have more than the usual teacher training, however. The special class should never be conceived as simply a place for extra fine teaching of the regular curriculum. In these classes the use of tools, different kinds of handwork, cooking, sewing, etc., should occupy the greater part of the time. The regular school subjects, if needed at all, should be reduced to the essential minimum. The classes should not exceed fifteen pupils at the most, because individual instruction, not group work, should

be the prevailing method.<sup>1</sup> There should be enough of these rooms in Boise to accommodate every backward child who cannot be reached by regular methods or Batavia teaching.

#### FEEBLE-MINDED CHILDREN

Eighteen pupils were classified by their teachers as feeble-minded, being "incapable of profiting normally from public school instruction," and being incapable of developing mentally above the level reached by the average child of twelve years. This represents about eight tenths of one per cent of the children in the schools at the time of the survey. Most of these children are over-age, many being seriously retarded, and there are evidences that the teachers' judgments of their intellectual grade are essentially correct. In some instances the mental deficiency is so obvious that it would not require a psychological examination to establish the validity of the teacher's classification.

There is also reason to believe that the teachers' estimates with respect to feeble-mindedness have been too conservative. A study of the data supplied by the teachers on all classrooms reveals suspicions of mental deficiency where the teacher has given "backward" as the classification. In these cases, of course, the teacher has played safe when her mind was in doubt, and in the absence of facilities for a psychological diagnosis her choice has not been unfair. The detecting of feeble-mindedness is a difficult matter, even for trained persons. Psychologists never attempt to diagnose intelligence without careful examinations, and it is not surprising that teachers were often in doubt in making the classifications for the survey.<sup>2</sup>

<sup>1</sup> It is recommended that the special classes be organized and equipped according to description by Dr. H. H. Goddard in his *School Training of Defective Children*, published by World Book Company, Yonkers, New York.

<sup>2</sup> Teachers' opinions, however, are considered by psychologists as being one of the most reliable sources of supplementary information on the intelligence of school children.

Feeble-mindedness is a social problem which cannot be successfully met by the public schools as they are now constituted. Feeble-minded children do not belong in the public schools. In refusing to accept mentally defective children, the schools can assist in preventing this condition, by making it necessary for the state to take prophylactic measures. Every feeble-minded child is a burden to society, and it is the urgent duty of society, not to give him a smattering of school work and turn him loose to propagate his kind, but to place him in an institution where he can receive custodial care and continuous supervision at least during the reproductive period of life.

Our prisons, reformatories, almshouses, and houses of prostitution are teeming with feeble-minded persons for whom the public schools have succeeded, if at all, only in camouflaging their true mental condition. It would be well for the public schools to take a definite stand regarding feeble-mindedness, and to call upon the state to make it impossible for feeble-minded children to be born.

There are, and always will be, feeble-minded children of high grade, possessing enough intelligence to do simple tasks, and even capable of making an independent living, under supervision. For these the special classes can do much by way of vocational training. There are probably several such cases among the pupils classified as backward. Procedure should be based, however, on the diagnosis of a clinical psychologist.

#### EXAMPLES OF FEEBLE-MINDEDNESS

During the survey a number of feeble-minded children were brought to the attention of the writer. In some cases examinations were made. Two of these seem of sufficient interest to report here. One is a feeble-minded child in the third grade, struggling along with the regular class, but with barely enough intelligence to do the work of the first grade well. The other is a child who has fortunately been

refused admittance to the schools, in which action the writer fully agrees with the school authorities. The real names of the children are not used.

*Marie S.* Age 10 years 2 months. Is in Grade 3 B. Physically normal, fine appearing, and would never be suspected of being other than normal mentally, except that she cannot do the work of the grade. Was given a clinical examination, requiring about 30 minutes, from which it was learned that her mental age is 7 years and 2 months. Her intelligence quotient is .72, indicating high-grade feeble-mindedness. The tests indicate that she is incapable of doing the work of the third grade, and it appears that she has been passed without good reason. She should be placed in a special class, or transferred to a school where she can receive special training suited to her intelligence. It is unlikely that she will ever develop mentally beyond the level of the average child of 12 years. This child has been adopted into an excellent home, but despite the care bestowed upon her has never shown normal intelligence. Her mother died of tuberculosis.

*Dora G.* Age 8 years 9 months. Tried in school, but was returned home and refused admittance because of inability to learn and repulsiveness to other children. Can barely talk, using mumbling sounds. For *book* says *boo*; for *key*, *gey*; *watch*, *wa*; *coat*, *doat*; *shoe*, *du*; *ten*, *gen*, etc. Unable to make sentences except for mechanical repeating of simple phrases often repeated to her. Has been defective from birth. First sat up when one year of age, first walked at two and one-half years, first repeated words at seven years. Cannot yet be said to talk intelligently. Can count to four by sounds intelligible only to those who know her. Unable to handle a pencil better than to make uncoordinated meaningless marks.

This child is an idiot, or at best a low-grade imbecile. Her intelligence is barely that of a child of two years, and it is unlikely that she will ever develop much more. Certainly she will never become normal, by any process of education or training. The parents, as is often the case, strongly resent the suggestion that Dora is in any way different from other children and make strenuous efforts to teach her to act and talk normally. So obsessed are they with the idea that she is normal, that they make repeated efforts to make the school authorities look at the case in the same way. The bringing of the child to the writer during the survey was an attempt to secure evidence from the survey staff to substantiate the claim of normality. The psychologist was strongly rebuked by the mother for not concurring in her opinion, although the test had been made as an accommodation to her.

TABLE 35  
TEACHERS' ESTIMATES OF CONDUCT, BY GRADES

Grade	Lie	Steal	Truant	Mischie- vous	Immoral	Fight	Average	Superior	Total
1 . . . .	9	3	1	36	11	2	294	59	415
2 . . . .	10	3	2	24	2	11	190	58	300
3 . . . .	19	9	7	33	6	12	177	57	320
4 . . . .	8	5	4	35	6	7	323	40	428
5 . . . .	9	2	2	34	2	6	254	50	359
6 . . . .	10	4	2	42	19	3	183	60	323
7 . . . .	7	6	12	33	2	2	197	70	329
8 . . . .	5	2	8	25	3	0	138	72	253
Total	77	34	38	262	51	43	1756	466	2727

#### DIFFERENCES IN CONDUCT

On the same form on which the estimates of intelligence were made, the teachers were asked to indicate the essential facts regarding the conduct of each child. Most of the pupils, as expected, were marked "average." About 17 per cent, or 466 individual pupils, were marked "superior." Some 300 pupils were reported to be of inferior conduct, being addicted to lying, truancy, mischief, immorality or fighting. The distribution, by grades, is shown in Table 35.

In this classification, as in the intelligence gradings, the teachers were asked to be conservative, and there is reason to believe that most of them were extremely careful, especially in denoting cases of bad conduct. The terms used are subject to various interpretation, but allowing for serious errors, it appears that the accompanying table is a reliable picture of the facts of conduct among the Boise school children. The table merits detailed study, and some teachers

will do well to make a similar survey of their rooms and make more detailed observations.

#### JUVENILE DELINQUENCY IN THE SCHOOLS

It may seem incredible to many persons that the figures of the foregoing table could represent actual conditions in the Boise schools. It is not so surprising, however, when we realize that more than 90 per cent of juvenile delinquency has its origin in the public schools. This is true not only in Boise, but in all cities. Lying, stealing, truancy, mischief, immorality, and fighting are signs of potential, if not actual, delinquency. Case histories of hundreds of juvenile court cases show that the symptoms were present in just such forms when the children attended the public schools. The more serious the present condition, the nearer the child to the juvenile court.

This does not mean, of course, that all the children reported by their teachers for unruliness are necessarily bound to become delinquent. All rules are subject to infraction, and any child at some time may be guilty of irregular conduct. But children who habitually or frequently lie, steal, run away, or commit immoral acts, are repeating the histories of children who have become delinquent. It is therefore the duty and the privilege of the school to take steps to see that actual delinquency does not occur. Principals and teachers should learn more of juvenile delinquency and its causes. Special observation and study should be made of children who depart seriously from ordinary conduct. The home conditions should be inquired into, the child should receive a psychological examination, and every effort should be made to correct wrong conditions which come under the authority of the schools. Where the school authority is not sufficient, coöperation should be given to those with whom the matter rests.

We are rapidly approaching the time when juvenile delinquency will be looked upon as primarily an educational

problem. Already steps are being taken to extend the authority and scope of the public schools to include children whose irregular conduct now automatically takes them to the juvenile court. Our courts and industrial schools are crowded to capacity, and the belief is being generally accepted that many of these children could have been kept from the court had their individual cases been better understood by the public schools. Organized effort on the part of teachers and principals toward the study of this problem should go far in preventing delinquency.

#### DEPENDENT CHILDREN

Dependency is a condition of inadequate or incompetent parental care. Children so declared by legal process are usually placed in the custody of private or public agencies. The education of these children becomes very important, because of their greater susceptibility toward delinquency and other social irregularity. In some cases delinquency has actually begun before the law recognizes the condition of dependency. Feeble-mindedness is relatively frequent among dependent children, because of the inheritance of the mental weakness that prevents the stability of many homes. Where the children are placed in other homes, there is always danger of neglect, abuse, and other conditions which are related to the child's education.

An interesting group of dependent children forms one of the classes of the Boise schools, located at the Children's Home. One full-time teacher is employed for this purpose, being a regular member of the teaching staff, and under the supervision of the city superintendent of schools. At the time of the survey an extra teacher had been employed for part time.

The schoolroom contained 33 desks, crowded together in a small room, all occupied, and with three extra pupils sitting on the front seats without desks. The seats are all adjustable but were not adjusted. The pupils were using slates,



most of which were broken and some of which were merely pieces of slate without frames. The slates were dirty and foul-smelling and were anything but an encouragement to neatness and order. The pupils had short, broken pencils, many of which were so short as to cramp the hands. All grades were represented, 1 to 8 inclusive, and the ages, sizes, and levels of intelligence were apparently as varied as one could well imagine. The room is lighted from the left and front with large, ample windows, all of which were tightly closed at the time of the writer's visit, a warm spring day. The room was decorated with the art work of the pupils, the quality of which was a credit to the teacher.

The work of this room was conducted in a mechanical, hasty manner, being handicapped by all the limitations of an overcrowded one-teacher rural school. It appears that whatever the children learned was in spite of the school rather than because of it. Although an attempt is made to follow the city course of study, liberties have been taken entirely in keeping with the difficulties under which the teacher worked. A visitor could hardly fail to observe the contrast between this room and the better-equipped rooms of the regular schools. A recitation in spelling was in progress at the time of the writer's visit. The following words selected from the dictionary by the teacher and grouped as shown, were used by all grades:

hasty, rash, impulsive,  
tame, docile, teachable,  
holy, divine, sacred,  
shame, disgrace, dishonor,  
shine, gleam, glitter,  
fill, cram, gorge,  
dark, gloomy, dismal,  
inert, lifeless, sluggish.

The pupils had diligently sought these words in the dictionary, and were required to spell and technically define each. The definitions, for the most part, were repeated mechanically, with little comprehension of the meaning. In

some cases it seemed fortunate that the child expended little effort to connect the meaning of the word with the practical necessities of life.

The foregoing description is not intended as a criticism. There is probably no more conscientious, and certainly no more hard-working, teacher in the entire city than the teacher of this room. It is physically and mentally impossible consistently to adopt up-to-date methods in a room which might better have fitted an eighteenth-century school.

The "overflow" room of this school, for which a part-time teacher is employed, was almost devoid of equipment, and was worse than makeshift. An advantage was afforded by its proximity to a large screened porch, which would make an excellent open-air room. As in the main room, the pupils come and go irregularly, as the home is a place of temporary detention in the case of some of the children. These conditions make teaching especially difficult, even where normal equipment is provided.

The education of these unfortunate children should be considered an obligation, not an act of charity. All advantages of the school system, with its best supervision, belong as much to these as to the other pupils. If the opportunities cannot be made equal by teaching at the institution, the children should be transferred to the regular schools. If such transportation is not feasible, the institution should be equipped, at the expense of the public schools, with school-rooms and equipment equal to the best in the city. Two classrooms, with two full-time teachers, should be provided. The same standards of equipment and procedure which are held for all the schools should also apply to these. It would be well in keeping with the importance of the problem to assign the two best teachers in the city to these classes. Owing to the great variability of dependent children, psychological examinations should be made of all who come to the Home. Backward pupils found here should attend special classes, as in the other schools.

**PHYSICALLY HANDICAPPED CHILDREN**

Scattered through the schools were observed children who are prevented from receiving the full benefit of the regular classes by reason of physical handicaps. A special class, centrally located, could care for children who are crippled, who are partially or wholly deaf, who stutter or stammer, and who have seriously defective vision. The struggle made by such children for an education, attended by constant embarrassment and hardship, is little appreciated by those who are more fortunately equipped.

**RESEARCH WORK IN THE SCHOOLS**

The topics touched upon in this chapter are suggestive of the hundreds of problems which confront the modern public school. We have ceased to look upon the school as merely a convenient means for cramming facts of knowledge into children's brains, but have come to regard it as one of the most essential elements of civilization. There is no phase of public welfare which does not relate to the public schools. The service which the schools are called upon to perform is no simple task. The community should demand, not a traditional set of schools, but an energy-producing organization whose vitality reaches into every phase of our local, state, and national existence. The schools should become laboratories for the study of these problems, so that as each child passes through the schools the facts regarding his development, his differences, his weaknesses, his strength, may be set in order and interpreted for the benefit of those who will follow. We must do in education what has been done in other lines of human endeavor — in mechanics, in agriculture, in chemistry, in medicine. We must learn new facts by making careful study of the facts now before us.

To this end every effort should be made to collect and interpret the facts, need for which this report has made evident and in the near future the city might well look forward to the establishment in the schools of a department of

research. Such a department should be equipped to make a continuous survey of the school system. Facilities should be provided for obtaining the mental, physical, and sociological facts concerning each child. The information should be systematically kept and classified for analysis and interpretation. The superintendent could call on this department for exact data regarding any phase of the school system. He should be able, through the facts presented, to know exactly what progress is being made in sixth-grade arithmetic, which school is making the best record in spelling; how the age-grade distribution compares with other cities; how many pupils could advance more rapidly in "opportunity classes"; how many children come from homes in which there is need of attention; what is needed in the community for Americanization work; how the school tax can be distributed more efficiently, and the answers to many other questions which have to do with the efficiency of the schools. Any principal could call for a special diagnosis of each child and for recommendations regarding the child's probable development. The possibilities for valuable work of this sort are limited only by the effort expended.

A department of research, if properly conducted, would keep the Boise schools at a continual high level of efficiency, and would probably do more than any other department in placing the city educationally among the foremost of the country. The department should be under the direction of a clinical psychologist, who should be assisted by trained workers in the different phases of the problem attacked. The size of the staff would depend upon the extent of the desired information. Experience elsewhere has shown that better teaching, better supervision, better grading, greater interest among the pupils, and a better community "spirit" toward the schools usually result from the introduction of this work.

#### . SUMMARY AND RECOMMENDATIONS

This chapter has presented some of the facts relative to exceptional children. The use of individual differences as a basis for classification and grading is rapidly becoming the practice of progressive school systems. Information supplied by the teachers revealed the presence in the Boise schools of several groups of exceptional children. While attempts are now being made to place these pupils in the best way possible, the present system does not permit of the classification which ought to be obtained. Special classes should be formed for children of marked superior intelligence and for subnormal children. The work of these classes should be adapted to the exceptional capacities and limitations revealed by psychological examinations. Special teaching on the Batavia plan should be provided for children who are backward in the school subjects. Feeble-minded children who are incapable of profiting from school instruction should be excluded from the schools and placed in institutions. Pupils whose conduct indicates that delinquency is imminent should be given special attention to prevent the necessity for action by the juvenile court. Teachers should become informed on the subject of juvenile delinquency and its causes. The work at the Children's Home should be placed on the same basis as the work of the other schools, and two full-time teachers should be assigned to that institution. Inquiry should be made as to the feasibility of establishing a special class for children who are physically handicapped. It is recommended that steps be taken to establish a department of research for the study of problems related to the efficiency of the schools.

## CHAPTER VIII

### THE CHILDREN'S HEALTH

(*Williams*)

#### WHAT BOISE IS DOING

**H**EALTH work in the Boise schools is supervised by one full-time nurse, with the coöperation of local physicians. The survey staff is of the opinion that the resulting supervision is excellently done, in proportion to the investment which the city annually makes for this work. At the time of the survey it happened that the school nurse was undergoing treatment in a local hospital following a temporary breakdown due chiefly to her activities in connection with the influenza epidemic. But for her unselfish devotion to the schools at that time, the epidemic in Boise might have assumed far greater proportions. The information for this section was obtained from a personal interview at the hospital, subsequent checking over of records, and the coöperation of the superintendent and teachers.

The school nurse divides her time between examinations at the schools and visits to the children's homes. The lack of clerical assistance has impaired the keeping of more extensive records, and it is evident that the statistical data found are too meager adequately to represent the work actually accomplished. A busy nurse has little time for clerical work, and can be of more value to the school by pursuing the work for which she is trained. Several of the forms used are herewith reproduced. The forms have been lettered arbitrarily A, B, C, etc., for purposes of this discussion.

The school physical examinations are conducted as follows: The nurse enters the schoolroom (preferably in the morning) and asks the children to stand. At that time she notes any defects of posture. She then passes down each

BOISE PUBLIC SCHOOLS	
PHYSICAL EXAMINATION	
Name _____	Grade _____
Address _____	School _____
Date of Birth _____	Date Examined _____
Weight _____	Height _____
Nutrition _____	
Enlarged Glands _____	
Nervous Disorder _____	
Cardiac Disorder _____	
Pulmonary Disorder _____	
Skin Disorder _____	
Contagion _____	
Defective Vision _____	
Disease of Eye _____	
Defective Hearing _____	
Disease of Ear _____	
Nasal Breathing _____	
Defective Teeth _____	
Hyp. Tonsils _____	
Adenoids _____	
Vaccination _____	
Exclusion _____	Readmission _____

I=Defect. O=Reported to Parent. X=Refused. M=Minor, not referred.

FORM A

aisle, making a hasty inspection of each pupil, noting cleanliness of face and hands, skin disorder, enlarged glands, nervousness, mouth breathing, discharging ears, suspicions

**PUBLIC SCHOOLS, BOISE, IDAHO**  
**DEPARTMENT SCHOOL HYGIENE**

Take this card at once to your Physician; then bring it back to your Principal.

\_\_\_\_\_ 19\_\_\_\_

Name \_\_\_\_\_ Address \_\_\_\_\_

School \_\_\_\_\_ Room \_\_\_\_\_

The Physician who examines the above named pupil is respectfully requested to date, sign and return this card to the child.

Please also record diagnosis on the reverse side of this card. This diagnosis is desired for the school, and the co-operation of physicians is earnestly requested in order that our records may be complete and accurate.

(OVER)

Upon examination of the child named herein on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, I make the following diagnosis.

(Please state whether glasses are ordered, or if operation has been decided upon.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

and have this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_ begun treatment.

\_\_\_\_\_ M. D.

FORM B

of eye trouble, signs of colds, etc. Each pupil showing physical irregularities of any kind is then sent to the principal's office, or into the corridor (there being no nurse's room). She then makes individual examinations of these pupils, with special attention to the condition noted or sus-



<b>PUBLIC SCHOOLS. BOISE, IDAHO</b> <b>DEPARTMENT OF HYGIENE</b>	
To the Parent or Guardian of _____ <div style="text-align: center; margin-top: 10px;">Public School No. _____</div> <p style="margin-top: 20px;">Health examination of your child by the nurse of the Department of Hygiene shows that _____ he needs medical attention.</p> <p>Please call at _____ school on _____          at _____ o'clock to confer with the Health Supervisor.</p> <p>Date _____</p> <div style="text-align: right; margin-top: 10px;">Principal. _____</div>	

FORM C

pected. As time permits, however, an individual examination is made of each pupil, following the outlines in Form A. Pupils who show special defects or signs of contagion or infection are sent home with a note to the parent, requesting an examination and a signed statement (Form B) from a physician. In cases requiring consultation with the parent, the principal notifies the parent on Form C. The nurse makes daily reports to the superintendent, a representative sample of which is shown on Form D. Tabulation of daily examinations is made on the cumulative record card (Form E), which shows the history of each child's health from year to year as he progresses through the schools.

A summary of the past year's work is shown in Table 36, made up from the daily reports transmitted to the superintendent's office. The nurse made 222 visits to the schools, made 2439 examinations, excluded 87 cases, and recommended treatment for 298 pupils. It is significant that 290 of these cases actually received treatment. The value of the work can be appreciated when we realize that the vast majority of the illness and defects treated would probably have escaped the attention of teachers and parents had it

# DAILY REPORT

## CLASS ROOM EXAMINATIONS

### BOISE PUBLIC SCHOOLS

No.

No. of Visits to Schools 2

No. of Pupils Examined 16

No. of Pupils Excluded

No. of Classroom Inspections 6

Recommendations for Treatment

*Med. Y.burg - 5*  
*Dental - 9*  
*Home - 3*  
*Tr. given - 2*

## DEFECTS FOUND

Decayed Teeth 9

Tonsils—Hypertrophy of 4

Eye—Defective Vision

Other Defects

Glands—Enlargement of

Adenoids

Nasal Breathing Impaired

Anemia

Nutrition

Skin Disease

Ear—Hearing Impaired 1

Discharging

Goitre 1

Heart Disease

Other Defects

Contagious Disease

## EXCLUSIONS

*Have tooth brush drill throughout  
Lincoln School. Every child in  
the building had a tooth brush.*

HOMES VISITED \_\_\_\_\_ old 5 new

DATE April 11, 1919

GERTRUDE CRAGIN,

School Nurse.



TABLE 36. SUMMARY OF DAILY REPORTS OF SCHOOL NURSE ON CLASS-ROOM EXAMINATIONS FOR THE SCHOOL YEAR 1918-19

	Sept. 16 to Oct. 17	Dec. 2 to May 13	Total
No. of visits to schools . . . . .	61	161	222
No. of pupils examined . . . . .	481	1958	2439
No. of pupils excluded . . . . .	21	66	87
No. of classroom inspections . . . . .	173	845	1018
Recommendations for treatment . . . . .	298	...	298
Medical and surgical . . . . .	...	370	370
Dental . . . . .	...	363	363
Home . . . . .	...	399	399
Treatment given . . . . .	25	265	290
Defects Found:			
Decayed teeth . . . . .	91	364	455
Tonsils — hypertrophy of . . . . .	87	162	249
Eye — defective vision . . . . .	15	60	75
other defects . . . . .	51	24	75
Glands — enlargement of . . . . .	4	12	16
Adenoids (five more suspected) . . . . .	...	45	45
Nasal breathing impaired . . . . .	2	16	18
Anemia . . . . .	1	5	6
Nutrition . . . . .	4	9	13
Skin disease . . . . .	30	53	83
Ear — hearing impaired . . . . .	1	26	27
discharging . . . . .	1	12	13
Goiter . . . . .	...	7	7
Heart disease . . . . .	3	...	3
Other defects . . . . .	2	20	22
Contagious disease . . . . .	10	7	17
Exclusions:			
Desquamation . . . . .	2	...	2
Chicken pox . . . . .	4	2	6
Eruption . . . . .	3	5	8
Headache . . . . .	...	7	7
Anemic . . . . .	...	1	1
Itch . . . . .	...	15	15
Barber's itch . . . . .	...	1	1
Nausea . . . . .	...	2	2
Pediculosis . . . . .	...	1	1
Pink eye . . . . .	...	8	8
Poison ivy . . . . .	...	1	1
Scarlet fever . . . . .	5	7	12
Smallpox . . . . .	3	...	3
Severe cold . . . . .	1	1	2
Spanish influenza . . . . .	1	2	3
Temperature . . . . .	...	12	12
Tonsillitis . . . . .	...	1	1
Vomiting . . . . .	1	...	1
Whooping cough . . . . .	1	...	1
Toothbrush Drill — buildings . . . . .	...	9	9
Homes Visited — old . . . . .	8	31	39
new . . . . .	50	245	295

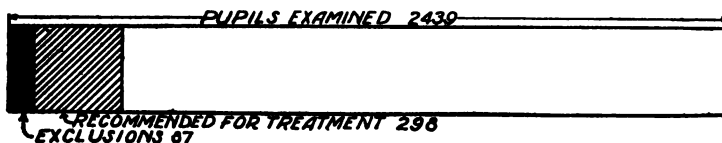


FIG. 27. RESULTS OF EXAMINATIONS BY SCHOOL NURSE, 1918-19

not been for the nurse's examinations. Preventive work in these cases alone would justify many times over the amount expended for health supervision.

The numerous defects found and the reasons listed for exclusion from school are suggestive of the duty which the city owes to its children. Figure 27 shows graphically the extent to which the schools contain children who, without special treatment, may contaminate or impair the efficiency of the entire school system. Health supervision, with the intelligent coöperation of teachers and parents, prevents untold suffering and actually preserves the lives and efficiency of future citizens.

#### ADDITIONAL NURSES NEEDED

Health supervision in Boise is too great and too important a task to shoulder on a single school nurse. She must necessarily work hurriedly and limit herself to the most urgent cases. One nurse for each 1000 pupils would be much better, and the results would probably more than justify the additional cost. Three school nurses, each with three elementary schools and a share of high school work, would be a wise provision. The minimum improvement should be one additional nurse, who, in addition to assistance in health inspection work should be used in home visiting and for assisting in the management of attendance, as suggested in Chapter II. Extra provision for clerical assistance is also needed. The keeping of records is second only to the actual supervision of the children's health. The inspection of these records will often save time and money. They also serve as a permanent cumulative record of the health conditions of

the city. The present school nurse is capable of directing the work of one or more assistants and supervising the clerical work. The energy and enthusiasm which she has already put into the work should be an inspiration to her associates and to the teachers, upon whose coöperation so much depends.

A BRIEF HEALTH SURVEY BY THE TEACHERS

Although the reports of the school nurse reveal conditions based upon professional inspection, and must therefore be considered the official source of information, it was desired to have each teacher make a brief survey of her room, and to report the observation which she and her pupils made. The following questionnaire was used, a copy being sent to each teacher in the elementary schools:

*Boise School Survey*

May, 1919

Form B (One for each teacher)

TEACHER'S SURVEY OF HEALTH AND PHYSICAL CONDITIONS

School\_\_\_\_\_Teacher\_\_\_\_\_Grade\_\_\_\_\_Pupils\_\_\_\_\_

Part I. *Fill out without asking children. Be accurate.*

1. Number of pupils who have frequent or chronic difficulty in breathing through the nose.
2. No. who have frequent or chronic nasal discharge.
3. No. showing signs of imperfect hearing.
4. No. who stutter or stammer.
5. No. showing defects of eyes or vision.
6. No. whose vision has been tested this year.
7. No. who wear glasses regularly.
8. No. who show nervous irritability, timidity, tendency to worry, crying without cause, etc.
9. No. who show signs of moral weakness.
10. No. who show marked lack of mental alertness.
11. No. who show unusual mental alertness.
12. No. lacking in play ability.
13. No. delicate or frequently ill.
14. No. whose posture (sitting or standing) is faulty.

Part II. *Ask the children the following questions and record the results.  
Be serious, and secure as accurate results as possible.*

1. How many have headache often? (2 or 3 times a month.)
2. How many have earache often? (2 or 3 times a month.)
3. How many have sore throats or colds often?
4. How many have had tonsils or adenoids removed?
5. How many have had tonsils or adenoids removed during the past year?
6. How many cannot easily read the writing on the blackboard?
7. For how many does the print in the book seem to blur, run together, or look black?
8. How many have ever gone to a dentist?
9. How many have done so during the past year?
10. How many have a toothbrush?
11. How many have toothache often?
12. How many usually come to school without breakfast?
13. How many do not usually eat lunch?

The reports, summarized in Table 37, furnish an interesting and valuable supplement to the findings of the school nurse. The number of defects reported by the teachers is much greater, but teachers cannot be expected to detect conditions with the accuracy of a trained nurse. That the teachers use varying standards is evident from the unevenness of the replies on certain items. At the Hawthorne School, for example, only one of 112 pupils was reported as having faulty posture, while at the Longfellow School more than one fourth of the enrollment were so reported. There is reason to believe, however, that the teachers took the task seriously and their observations are to be considered highly significant. The teacher's daily contact with her pupils gives her an opportunity for observation which the school nurse cannot have. For this reason the nurse must continually rely upon the teacher's help.

Some of the problems of health which are important to all schools will be briefly reviewed here, with special reference to the findings among the school children of Boise.

#### POSTURE

The teachers report 405 pupils as having faulty posture. Although none are reported by the school nurse, she has

# The Children's Health

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TABLE 37

SUMMARY OF DATA GATHERED FROM QUESTIONNAIRE ON HEALTH CONDITIONS, REPORTED ON BY EACH TEACHER IN THE ELEMENTARY SCHOOLS

## Part 1. Answered by teachers

	Central	Garfield	Hawthorne	Lincoln	Longfellow	Lowell	Park	Washington	Whittier	Total
No. of Pupils	371	259	112	166	427	263	438	267	175	2456
1. Difficulty in breathing through nose . . . . .	33	39	4	10	61	20	54	31	20	272
2. Nasal discharge . . . . .	10	17	4	12	44	7	31	14	7	146
3. Imperfect hearing . . . . .	13	10	5	9	21	12	17	13	7	107
4. Stutter or stammer . . . . .	6	3	2	4	16	7	14	..	2	54
5. Have eye defects . . . . .	26	31	4	10	44	16	54	33	31	249
6. Vision tested this year . . . . .	91	17	5	143	53	20	123	175	175	802
7. Wear glasses regularly . . . . .	14	13	2	7	24	14	14	11	9	108
8. Nervousness, etc. . . . .	17	23	3	9	35	4	37	23	18	169
9. Moral weakness . . . . .	15	23	..	11	25	4	26	12	7	123
10. Lack mental alertness . . . . .	40	33	11	28	46	7	32	30	20	247
11. Unusual alertness . . . . .	32	44	..	11	32	27	22	16	21	205
12. Lack play ability . . . . .	4	8	1	10	12	5	12	7	2	61
13. Delicate or ill . . . . .	23	23	5	31	39	21	40	23	25	230
14. Have faulty posture. . . . .	48	98	1	16	111	21	54	30	26	405

## Part 2. Answered by pupils

1. Headaches often. . . . .	65	71	17	41	114	70	107	55	72	612
2. Earaches often . . . . .	34	11	21	18	36	18	39	22	25	224
3. Sore throats, colds often . . . . .	58	67	32	40	96	52	106	78	54	583
4. Tonsils, adenoids out . . . . .	87	38	35	44	97	95	82	60	65	603
5. Tonsils or adenoids out this year . . . . .	27	9	14	14	27	22	15	14	11	153
6. Difficulty reading blackboard . . . . .	12	22	11	14	39	20	39	28	81	266
7. Print blurs, etc. . . . .	51	58	29	28	97	52	91	50	79	535
8. Ever gone to dentist . . . . .	267	152	69	114	229	187	290	155	134	1598
9. To dentist this year . . . . .	132	53	37	68	181	97	170	116	101	955
10. Have toothbrush . . . . .	321	138	105	166	381	252	380	267	166	2176
11. Have toothache often . . . . .	49	42	26	19	89	47	83	47	48	450
12. Have no breakfast . . . . .	17	6	2	4	39	15	25	9	8	125
13. Have no lunch . . . . .	2	3	5	1	7	12	5	..	3	38



doubtless observed many cases. It is not unreasonable to suppose that disorders of growth, with their evil effects on school life, are as common in Boise as in most other American cities. Terman and Hoag estimate that from 20 to 30 per cent of the school children in the United States are affected by spinal curvature, which is the common pathological cause for incorrect sitting and standing.

Spinal curvature is a functional disorder, and does not have its origin in the school. The school should be held responsible, however, for providing desks and seats which are adjusted to the physical requirements of children thus affected. There are probably not enough adjustable desks in Boise schools to supply the deformed pupils, if their use were to be so limited.

The school also may be held responsible for the posture of children whose spines are not curved, but who have formed incorrect habits of sitting, standing, and walking. Often these habits result from desks which are not properly set, or which are not fitted to the pupils using them. Even a stationary desk can be set the "minus" distance, and with desks of different sizes each pupil may be reasonably fitted. Instruction in the proper carrying of books and in correct standing, sitting, and walking will go far toward improving posture in the school. Exercises may be given which will not only benefit all the pupils, but will also improve those afflicted with functional curvature.

#### NUTRITION

Nearly 10 per cent of the pupils are reported delicate or frequently ill. The teachers' observations in this respect cannot be often mistaken. While there are numerous causes for this condition, it may easily result from insufficient or improper feeding among children whose physical condition is otherwise normal. The seriousness of the situation in Boise is made more apparent by the testimony of 125 children who regularly come to school without breakfast, and

38 who regularly eat no lunch. The proportion of these cases is greatest at the Longfellow, Lowell, and Park schools.

It does not follow that all the children who do have breakfast and lunch are properly fed. Some of the lunches brought to school would be better not eaten. Close supervision over such matters, with home visiting and advice by the school nurse, will help bring about better feeding. The cooking classes can be utilized to good advantage in the dissemination of food knowledge.

#### TUBERCULOSIS

This disease is so common among school children that a knowledge of its causes and effects should be made a part of the professional equipment of every teacher. So common is this plague, that if the total number of cases in the United States were to be spread evenly according to the population, Boise's share would be nearly 500. About 100 of these would be school children. It is probable that Boise does not have her full share, thanks to her location and climate. On the other hand, many tuberculous persons seek such climates for their recovery. It is conceivable that there are dozens of cases in this city, and that many children are in daily contact with the disease. Thorough inspection, medical supervision, clean buildings, and fresh air are among the contributions the school can make. Prevention should be made the key word of all health work.

#### CONTAGION IN THE SCHOOLS

The influenza epidemic illustrated in Boise, as in other cities, how rapidly disease can spread, even when drastic preventive measures are taken. The mingling of hundreds of children from hundreds of homes gives the schools an opportunity to become either the city's greatest source of illness or its greatest source of health conservation. Particularly in the matter of contagious diseases, the schools are

**PUBLIC SCHOOLS**  
BOISE, IDAHO

DEAR PARENT:

Date \_\_\_\_\_

This is to inform you that a case of \_\_\_\_\_ has been discovered  
in the \_\_\_\_\_ Grade of the \_\_\_\_\_ Building and all  
children attending that room have been exposed.

**PRECAUTION**

As a possible preventative give child's hair and scalp antiseptic wash and give good hot antiseptic bath. One of the best antiseptic soaps to use for this is SYNOL SOAP. This may be secured from any druggist. Have child gargle with salt and water—1 teaspoonful salt to 1 glass warm water.

If your child gets this disease he must remain at home for \_\_\_\_\_ weeks and bring physician's certificate which will be accepted after the \_\_\_\_\_ day. Please report AT ONCE to Principal, attending physician or city health officer if child appears sick during next two weeks.

GERTRUDE CRAGIN,  
Nurse.

FORM F

closely related to the social and economic welfare of the community.

Rigid care, supported by legal requirements, has been exercised in the Boise schools relative to contagion. Forms F and G indicate the coöperation of the school, the home, and the state in the prevention of spreading diseases.

#### VENTILATION AND HEALTH

Suggestions for the improvement of the ventilation systems in the schools are made in the chapter on buildings and grounds. The effects of bad ventilation should logically come to the attention of the school nurse. Her evidence will support the recommendation that an abundant and constant supply of clean, fresh air be circulated through each schoolroom.

#### TEETH

About 15 per cent of the pupils examined by the school nurse were recommended for dental treatment. This includes, of course, only children whose parents had not previously provided adequate treatment. That there are many parents in Boise who do not attend to their children's teeth is indicated by the statements of 858 children that they *have never been to a dentist*. This represents more than 30 per cent of the elementary school enrollment. The number who say they *have no toothbrush* is 280, or about 10 per cent of the enrollment. Even if one half of these children are mistaken, the numbers represent significant proportions. In the light of other facts it seems probable that considerably more than one half of them have told the truth. One wonders how many of the 450 who report frequent toothaches are among those without toothbrushes and who have never had a mouth inspection. We are also compelled to wonder how the toothbrush drill must seem to the 280 who have nothing with which to practice at home.

Regular instruction by the school nurse in the use and importance of the toothbrush has brought effective results

STATE OF IDAHO. BOARD OF HEALTH		File No. ....
BUREAU OF VITAL STATISTICS		Registered No. ....
<b>CERTIFICATE OF DISEASE</b>		
REGISTRATION DISTRICT NO. 2.		PRIMARY REGISTRATION DISTRICT NO. 1004
A case of .....	exists at .....	Date .....
Name of patient .....	Age .....	Sex .....
Name of parents .....	Residence .....	Color .....
Name of school attended .....	Number in school .....	street, Boise, Idaho
How many were exposed .....	Source of infection .....	street
If Diphtheria, was antitoxin used? .....		
If Smallpox, when last vaccinated? .....		
<b>CERTIFICATE OF ATTENDING PHYSICIAN</b>		
I hereby certify that I attended the above named patient and that a temporary quarantine was established .....		
Quarantined .....	Released .....	Attending Physician .....
Detention Hospital .....	weeks and .....	Lampa, & .....
	days, & .....	

FORM G

during the past year. The use of Form H, for instructing parents, is commendable. A school whose pupils clean their teeth each morning has made a worthy accomplishment.

#### NOSE AND THROAT

More than 11 per cent of the pupils, or more than the total enrollment of the Washington School, are reported by their teachers as having difficulty in breathing through the nose. More than one half of this number have nasal discharge. Sore throats and colds are common, according to the testimony of the children. These facts are not surprising in the climate of Boise. The air is dry and necessarily contains particles of dust. Unless this air is mixed with moisture before being breathed, the sharp dust particles irritate the delicate membranes of the nose and throat, which, when allowed to become dry, are powerless to resist. The broken and roughened membranes become easily infected, and serious ailments often result. Many of these cases must escape the attention of the school nurse, owing to the necessity for hasty inspection. Nasal discharge and impaired breathing are easily noticed by the teachers, owing to their effect upon the recitation and study periods. Such cases should always be reported to the school nurse. We cannot afford to pass over them lightly.

Still more serious are the indications of adenoids and diseased tonsils. The school nurse reported 249 cases of hypertrophied tonsils and 45 cases of adenoids, out of 2439 examinations during the past year. The children reported 153 operations, most of which were probably made on the recommendation of the school nurse. It is to the credit of the school health department that these suggestions were carried out. Assuming that the operations represent the most serious cases, the remaining 250 must include many cases needing immediate attention. No doubt some of these were taken care of during the summer vacation. It is not unlikely, however, that children were returned to the school

## INSTRUCTIONS TO PARENTS

### CARE OF THE MOUTH AND TEETH.

The examinations of school children show that in many instances the teeth are in a decayed and unhealthy condition.

A child's first teeth are as important as its second teeth. They should be preserved until replaced by the second set.

If the first teeth are allowed to decay the jaw does not develop to its proper size and the large second teeth will be crowded and often irregular.

Decayed teeth produce uncleanliness. Pus forms abscesses, diseased gums and toothache.

Improperly chewed food, mixed with pus, causes indigestion and general poor health, and handicaps the child's progress in school.

Most disease germs enter the body through the mouth. A child with a diseased and unclean mouth is much more likely to contract any contagious disease.

The teeth should be brushed every NIGHT and MORNING. Make a special effort to preserve them.

GERTRUDE CRAGIN,

*School Nurse.*

FORM H

in September whose health was greatly impaired through neglect of these reported conditions. Diseased tonsils are now known to be the source of much disability and mortality formerly attributed to other causes. Teachers and principals should coöperate with the health authorities to stamp out nose and throat diseases in the schools.

#### HEARING

In the case of ear defects there is a wide discrepancy between the teachers' observations and those of the school nurse. The teachers report 107 cases of imperfect hearing, while during the past year but 27 cases came to the attention of the nurse. Here again it is probable that only the more marked cases were reported at the classroom examination. It is probable that the teachers' estimates are nearer the truth. Hearing is an essential factor in instruction. Teachers are in an excellent position to detect temporary or permanent auditory defects. All teachers know how the weakness of this important sense may produce school retardation. It has been found that some children are needlessly repeating their school work by reason of ear defects that could easily be remedied. The statements of 224 Boise children to the effect that earaches are common with them should be a matter of grave concern to the schools. Hearing tests in which the teachers can coöperate with the school nurse are now available and should be used at least once a month in each schoolroom. More attention should be given to the seating of the children who do not hear well.

#### EYE TROUBLES

Tests of vision have been made through the schools, but as in the case of other health observations, they have been limited chiefly to the pupils whose defects were marked, or who, for some reason, were especially called to the attention of the school nurse. The number of defects reported is relatively small, and is probably a conservative estimate.



The nurse reports 150 cases out of last year's examinations, 75 of which were cases of defective vision. The teachers report 249 cases, which indicates that about 10 per cent of the pupils enrolled have vision so poor that it has come to the attention of the teacher. From the children themselves come the reports that 535 find that the print in the textbook blurs, 266 cannot clearly read ordinary writing on the blackboard, and 612 have frequent headaches. While all of these probably cannot be due entirely to eye defects, most of them can be traced to that source. These facts are shown graphically in Figure 28. Probably the proportion of pupils needing the attention of an oculist is far greater than has been suspected. It is not unlikely that some of the difficulty can be traced to the improper lighting of schoolrooms, to which reference has been made in another chapter.

The testing of vision is such a simple matter that it should be more widely carried on in the schools. The McCallie Vision Cards, which have been successfully used in many cities, constitute a convenient and reliable means of measuring relative visual capacity. These tests can be given by any teacher to all the pupils in her room in less than fifteen minutes.<sup>1</sup> Five dollars would buy enough tests to supply all the schools for many years. Such work done at regular intervals would be of great help to the teachers and would furnish invaluable coöperation with the school nurse. Children's eyes are one of the most precious assets in the acquirement of an education. The efficiency of the schools demands a careful attention to matters of visual hygiene.

#### NERVOUS CONDITIONS

All of the 167 pupils reported as being nervous require further observation. Many of these are of a high-strung, excitable temperament, which may interfere with school work and health, if not guarded. Children who are naturally

<sup>1</sup> A demonstration of these tests was given at the Hawthorne School during the survey.

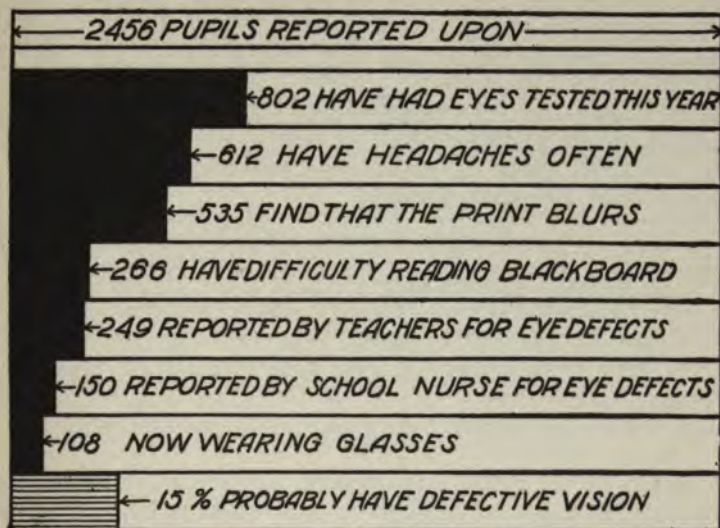


FIG. 28. DATA RELATING TO VISION IN THE SCHOOLS OF BOISE

weak in the control of their nervous mechanisms are subject to many undesirable conditions. The neglect of such cases is turning to the juvenile courts hundreds of children whose delinquency might have been prevented through their proper care during the early years of school life. A special study of all nervous children would be an undertaking which the principals and teachers could well afford to make.

#### SPEECH PROBLEMS

The number of pupils reported as being subject to stuttering or stammering is relatively small in proportion to some of the other defects, but there are enough cases to justify the establishment of at least two or three special classrooms for speech development, which is the practice in some cities. The fact that nine out of every ten cases of stammering can be cured by relatively simple treatment argues strongly for this work to become a part of the educational program. The

employment of a single special teacher in Boise for this purpose would probably cost less than the extra cost of the retardation of these pupils. With a little instruction some of the regular teachers could assist in bringing about normal speech habits in stammering children. Dr. Lewis M. Terman in his *Hygiene of the School Child* suggests the following of these simple directions:

Arrange with the child to remain a half-hour after school three or four times a week for a speech lesson. Let this consist largely of conversation in a low, ordinary tone of voice. Convince the child that he will be able to overcome the defect. Repeat this assurance until it becomes an absolute conviction. Stuttering will ordinarily not cease as long as the fear of it remains. . . . He must be taught to take a reasonable attitude toward his defect and toward people.

#### MENTAL CONDITIONS AND HEALTH

About 10 per cent of the children are noticeably lacking in mental alertness, according to the observations of their teachers. Sluggishness of mental operation is not infrequently a definite symptom of physical defect. General physical weakness, malnutrition, adenoids, tonsils, impaired hearing, speech impediments, and other defects referred to often prevent the proper exercise of the mind. Indeed, so close is the relation existing between school success and health that the belief has sometimes been expressed that the development of intelligence is retarded by physical defects. Intelligence tests have shown that this is not true to the extent supposed, but many physically defective children have been found to be incapable of doing the work which could normally be expected from their mental ages. School efficiency requires sound minds in sound bodies. It should be the business of the school to see that both of these important elements are given their full measure of attention.

#### PLAY AND HEALTH

Judging from the teachers' observations, the ability to play normally is common to nearly all the children in the

Boise schools. The ability to play is a natural gift, and fortunately does not depend entirely upon the amount and kind of equipment provided. There is no foundation, however, either in theory or practice, for the notion that playground apparatus is unnecessary to the best use of the play instinct. It might be said truthfully that children can learn to read without textbooks and that they could learn to write by marking on the ground with sticks. At the same time we encourage the use of good books and writing materials because we know that more efficient results can be obtained from their use. The fact that the teachers report 61 pupils to be lacking in play ability may not be due altogether to the lack of apparatus, but it is reasonable to suppose that many of them can be developed by putting playground work on the same basis as classroom instruction.

#### SOURCES OF INFECTION

Numerous references are made in the chapter on buildings and grounds to points in building construction and sanitation which are directly related to the health of the children. In fact, there is hardly a part of the school plant which is not so related. Some parts are especially liable to affect the physical condition of the pupils through infection or contamination. Among these, perhaps, the toilets are of greatest importance. These rooms should be kept clean, dry, and well lighted at all times. Ample washing facilities, including clean basins, warm water, liquid soap, and paper towels should constitute the standard equipment. Habits of cleanliness and sanitation can be best learned in the presence of wholesome surroundings and equipment which invite its regular use.

Banisters and other parts of the buildings which the children touch with their hands should be kept clean with a disinfectant. All forms of equipment intended for general use should be systematically and frequently cleaned. In some of the dark but regularly used parts of the Boise school

buildings it is an easy matter for janitors to neglect these details. Among the 89 exclusions from school during the past year on the recommendation of the school nurse may be found cases which show the necessity for taking advantage of every possible means of preventing the spread of infection.

#### HYGIENE TEACHING

The course of study provides for instruction in hygiene in the first six grades of the elementary schools. The outline for the current year is as follows:

#### HYGIENE

##### *Grades 1, 2, 3, 4*

##### **I. Form habits of personal cleanliness:**

1. Bathe frequently.
2. Brush teeth (up and down as well as across) after each meal.
3. Keep clean face, neck, ears, hands, and finger nails.
4. Wash scalp and hair at least once each month. Keep hair neatly combed.
5. Brush clothes and shoes.

##### **II. Form habits of regular living.**

1. Go to bed early. Keep windows wide open in sleeping rooms so that the air may pass through freely.
2. Eat at regular hours.
3. Play in the open air.

##### *Fifth Grade*

##### **Care of the body and its organs:**

1. The necessity for pure air and how to secure it; adequate ventilation.
2. Microbes and cleanliness.
3. Value of sleep and the amount necessary.
4. Care of the eyes, ears, teeth, nails, hair, skin and clothing.
5. Work of the nose and lungs.
6. Appropriate physical exercises; play in the open air.

##### *Sixth Grade*

##### **Municipal health:**

1. Clean streets and children's part in this.
2. Proper disposal of garbage, ashes, and rubbish.
3. Need of playgrounds.
4. Prevention of fires.
5. Importance of good water supply and food inspection.

6. Epidemics and safeguards against them.
7. Effects of alcohol on vigor.
8. Cost of liquor to the municipality.

Health Habits — O'Shea and Kellogg.

Aim: To fix right habits of living.

6B. Pages 1-105.

6A. Pages 106-206.

This outline, although too brief to serve as a manual of directions, suggests to the teacher the essential feature of hygiene teaching during the first years of school life; namely, that it should be informal, with a view toward inculcating correct habits of living, rather than filling the children's minds with the technicalities of physiology and disease. If the lessons in this outline are learned and followed regularly by the school children of Boise, there will be health and vigor in the growing generation. Especially commendable is the encouragement of frequent bathing, fresh air, habits of regular living, exercise, and general preventive work. An excellent opportunity is offered here for follow-up work on the part of the teachers and the school nurse. Regular surveys could be made, by classrooms, to see how many pupils were profiting from the instruction. Hoag and Terman in *Health Work in the Schools* show how health surveys can be conducted quickly and easily by any teacher. Children find pleasure in undertaking such surveys. Their regular use may be made a valuable source of unconscious self-instruction.

It is unfortunate that the hygiene course is limited to the first six grades. Commendable as this informal work is, its effectiveness would be multiplied many fold by following it with more definite instruction in the seventh and eighth grades. Here the practical aspects of bacteriology, home hygiene, municipal and industrial hygiene, etc., could be emphasized by concrete observations and illustrative material. Good teachers can make hygiene a popular and highly profitable course in the upper grades. The emphasis

throughout the schools should be on prevention and wholesome living, with as little as possible of the morbid aspects of the problem.

#### THE TEACHER'S HEALTH

It is generally recognized that healthful schools require healthy teachers. The importance of this may be expressed before long in the requirement that all candidates for teaching positions pass a physical examination as a prerequisite to their employment. The army enlistment standards of health could as logically be adopted for those who enlist in the teaching ranks of the public schools. The board of education, as well as any business concern, is justified in demanding that its employees be in sound physical and mental health at the beginning and throughout the period of employment. Efficiency in teaching is no less dependent upon health than success in the industrial or commercial world. The teacher's health is more important than that of a factory hand, for not only is her personal welfare at stake, but the welfare and even the lives of her pupils may depend upon her strength, vigor, and habits of living. The community should coöperate in this health program by providing teachers and pupils with clean, wholesome surroundings.

#### THE JANITOR AND HEALTH

School janitors in Boise, as in many other cities, are employed without much regard to either health or training. Yet the responsibilities vested in him make him, next to the principal, the most important official in the school. We may confidently expect that within a few years janitors in all of the more progressive school systems will be selected with as great care as is now exercised in the selection of teachers. The janitor will be required to know, in addition to the necessary mechanical knowledge, the fundamental principles of school hygiene. It will be necessary for him to know

how to produce correct heating, lighting, and ventilation; how to adjust seats and desks scientifically; how properly to disinfect rooms; how to prevent the accumulation and spread of dust; what diseases are transmissible, and how they can be prevented; in short, how to keep the school as hygienic as a hospital or a kitchen. Moreover, he should know of such matters in their relation to the health and development of the children, for in his hands rests the secret of the physical success of the school. This will require a scientific and educational training which, needless to say, few school janitors ever receive. Obviously it will not be possible to provide the schools at once with trained janitors. There is little inducement at present for capable men to choose this vocation early enough in life to become trained. There are few places, in fact, where such training is offered. The most practicable step for the schools to take lies in the direction of insisting on high standards of intelligence and education, and pay enough to secure men who meet these standards. Such men will usually be found willing to devote a portion of their time to study, and every hour so spent will yield valuable returns to the schools. The Board of Education could well afford to furnish each janitor with a good book on school hygiene and with magazines devoted to the problems with which he has to deal. Dr. Fletcher B. Dresslar in his *School Hygiene* gives a list of twenty rules for janitors, which, if learned and applied, in themselves furnish a valuable elementary textbook.

#### OPEN-AIR SCHOOLS

All the classes in the Boise schools are conducted within closed walls. Inasmuch as most of these rooms are incorrectly ventilated, there is nothing in the city which approaches the open-air class. Yet there are enough tuberculous and pre-tuberculous children alone to fill at least one such class. Probably three or four classes would be none too many to handle properly all the children who could



profit greatly from them. To give these children a chance at recovery is the least that should be done for them. Many cities in the United States during the past ten years have adopted the plan of having open-air classes, and in every instance the benefits derived were sufficiently evidenced to warrant their continuance. In some instances the improvement in the children is almost incredible, but actual measurements and tests have substantiated the claims made. No city which has established open-air schools has abandoned them. It would be well for Boise to follow their example, and at least test the method.

Open-air schools are not expensive. In fact, they can often be very cheaply constructed, or made out of buildings which no longer serve the needs of regular schools. It has been suggested that the Hawthorne School be converted to such use. It is recommended that consideration be given to this suggestion before the school is abandoned. Some cities have adopted a policy of providing at least one open-air classroom in each new building. In California it is not uncommon to construct schools so that all rooms may be converted into open-air rooms in a few minutes. A study of the buildings in Boise, especially in connection with suggested improvements in lighting, will doubtless reveal plenty of opportunities for making open-air classrooms with very little expenditure.

#### SUMMARY AND RECOMMENDATIONS

1. Medical supervision in Boise is carried on by one school nurse, employed for full time. The work accomplished thus far is commendable, but should be extended and supplemented. It is recommended that at least one additional school nurse and clerical assistance be provided.

2. A survey of certain health conditions revealed health facts of far-reaching significance. Many children have defects which could easily be remedied by extended health supervision. The extra cost to the schools of the retarda-

tion of these children is probably much greater than would be the cost of the attention they need.

3. The large number of cases of faulty posture may be closely related to the fact that most of the seats and desks are non-adjustable. It is recommended that at least one fourth and eventually all of the pupils be provided with adjustable desks and seats.

4. Too many pupils come to school without having been sufficiently fed. It is recommended that all these cases be immediately followed up, to the end that better conditions of nutrition be secured.

5. Tuberculosis, which is found in more than 10 per cent of public school children, is probably as common in Boise as in other cities. It is recommended that teachers be better informed as to the symptoms, causes, consequences, prevention, and treatment of this disease.

6. Commendable care has been exercised by the school nurse in preventing the spread of contagious diseases. With a larger working staff this work can be carried on still more efficiently, to the direct profit of the community.

7. The improper ventilation of many of the schoolrooms calls for special attention, with emphasis on the relation of pure, fresh, moist air to the health of the children. Recommendations on this point are made in the chapter on buildings and grounds.

8. Conditions regarding the proper care of teeth are deplorable, notwithstanding the regular toothbrush drills and supplementary instruction given by the school nurse. Education on this point should extend to parents as well as pupils. A good beginning in this has already been made.

9. Nose and throat affections are especially common in the Boise schools, due perhaps in large measure to the dry air and dust of the schoolrooms.

10. Imperfect hearing and discharging ears are frequent. With extended supervision many of these conditions can be overcome, or early treatment provided. It is recommended that hearing tests be made regularly in the schools.

11. Defective vision, with its attendant complications, is more common than has been supposed. More than 800 children have been given vision tests during the year. This work is excellent, but should be extended to include all the pupils. Satisfactory tests of vision can be made by the teachers. It is recommended that such tests be given at least twice a year, and that adjustments be made according to the findings.

12. More attention should be given to the problem of nervousness among the school children. Juvenile delinquency often follows the neglect of this matter. There are 167 pupils in the Boise schools who are reported as nervous.

13. It is recommended that special instruction be given to children who stutter or stammer, by the establishment of speech classes.

14. It is recommended that further attention be given to the development of play activities, with the equipment of the playgrounds. There should be at least one playground supervisor for the schools.

15. Some conditions in the Boise schools are sources of infection because of inadequate sanitation. Regular use of disinfectants is urged.

16. A good beginning has been made in the teaching of hygiene in the first six grades. It is recommended that this be followed by courses in the seventh and eighth grades.

17. It is recommended that higher standards of health be held regarding the employment of teachers, and that the schools coöperate in the maintaining of a physically and mentally sound staff by making the school conducive to the health and comfort of the teachers.

18. It is recommended that higher standards be maintained in the selection of janitors; that higher salaries be offered in the securing of competent men; and that professional advancement be promoted by providing the janitors with books and magazines relating to school house-keeping.

19. There are enough children in need of fresh-air treat-

ment to justify the establishment of several open-air classes or one open-air school. It is suggested that the Hawthorne School be converted to this use. It is recommended that future buildings be provided with at least one open-air room in each.

## CHAPTER IX

### BUILDINGS AND GROUNDS

(*Williams*)

#### THE BUILDING SITUATION IN BOISE

NO one would expect to judge the efficiency of a school system entirely by its buildings and grounds, but these factors are of such importance that they may often serve as an index of the educational progress of a city. As a rule, good school systems are equipped with good buildings, and cities which are negligent with reference to their school plant also neglect other things which relate to the education and welfare of their children.

In Boise the school plant is perhaps the greatest outstanding weakness of the school system. Not only do many of the buildings grade far below the standard, but in some respects they are so inferior as to raise serious doubts as to their present suitability for school purposes. There is not a single "standard" building in Boise; there are at least five buildings which require immediate improvement.

It is not difficult to understand why these conditions exist. Standards for school-building construction are of relatively recent origin. Of the ten schools in Boise, only two have been built during the past fifteen years (Figure 29). Since that time enormous strides have been taken in school planning. The modern building is erected according to the dictates of science, following the fundamental principles of educational hygiene and school efficiency. That these principles did not direct the construction of the Whittier, Lincoln, Garfield, and Hawthorne schools only emphasizes the educational progress of the past two decades.

As Boise has busied herself about other problems, and as the city has rapidly enveloped these old structures, their

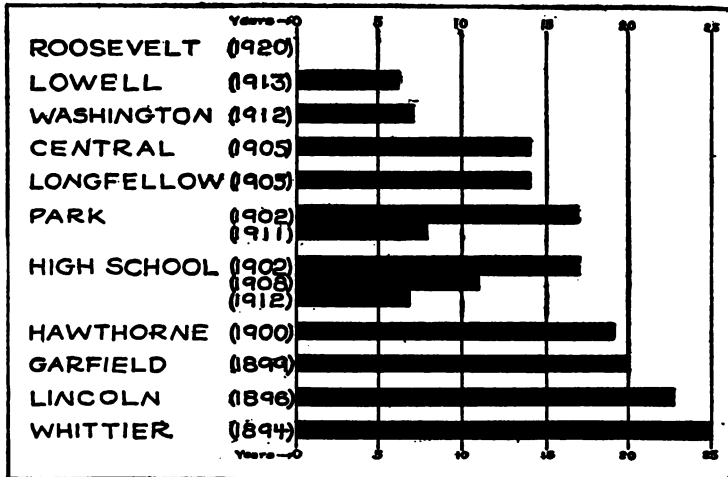


FIG. 29. AGES OF BOISE SCHOOL BUILDINGS

decreasing efficiency has been little realized. The lack of adequate fire protection, the insufficiency of lighting and ventilation in many of the classrooms, the lack of means for humidifying the air, the use of unsanitary basement rooms for janitors' living quarters, the lack of telephone connections between the schools and the superintendent's office, the inadequacy of library facilities and almost total absence of playground equipment, have been left unnoticed or unattended to for so long that they seem to effect no protest from the community.

The problem here takes on three aspects: first, the improvement of the present buildings, bringing them up as nearly to the standard as possible; second, the abandonment of the oldest buildings and replacing them with modern structures; third, the formulation of a building policy that embodies the ideals that make for the highest school efficiency. That the consideration of these steps may be based upon existing facts, let us view the Boise school plant in the light of standard measurements.

## BUILDINGS MEASURED BY STANDARD SCALE

The method used is the application of the "Score Card for City School Buildings," by Dr. George D. Strayer of Columbia University. This is a guide for the inspection and grading of school buildings, following a detailed outline of the important items of school-building construction, each of which is accorded a standard number of points. The scale is divided into 1000 points, divided with relative weighting among five general items: *Site, Building, Service systems, Classrooms, Special rooms*. Each of these is divided into several smaller items, and each separate part is given a number of points according to its relative importance. The values for the scale have been derived from the scorings of a large number of persons competent to judge school buildings.

The ratings of the Boise buildings were made by the writer after a careful study of the data gathered through a personal inspection of each building, accompanied by the school principal. The study also included interviews with the superintendent of buildings, and with janitors, teachers, and other school officials, as well as the checking of data in the office of the superintendent. It is believed that the observations were made with sufficient accuracy and thoroughness to warrant the judgments rendered on at least the more important items.

The grading of each building in comparison with the standard is presented in detail in Table 38. The comparative gross ratings are shown in Figure 30. The number of points in each case, represented by the length of the bar, may be easily read on a percentage basis. Thus, the Lowell School, grading 837 points, rates 87.7 per cent; the high school, 83.6 per cent, etc. The lowest rating is that of the Whittier School, 59.6 per cent. These figures represent only the total scores. It does not follow that because a school grades higher than another in the gross score, it is necessarily better in each separate item. On the whole, however, the

TABLE 38  
RATINGS OF BOISE SCHOOL BUILDINGS BY STRAYER SCALE

	Standard Score	High School	Central	Garfield	Hawthorne	Lincoln	Longfellow	Lowell	Park	Washington	Whittier
I. Site . . . . .	125	115	118	115	124	120	118	118	105	115	120
A. Location . . . . .	55	55	53	55	54	55	55	53	40	50	55
B. Drainage . . . . .	30	30	30	20	30	30	28	25	30	25	30
C. Size, form . . . . .	40	30	35	40	40	35	35	40	35	40	35
II. Buildings . . . . .	165	138	145	113	105	102	148	161	126	161	108
A. Location . . . . .	25	22	21	23	22	18	23	30	21	30	18
B. Exterior . . . . .	60	56	58	48	41	42	58	58	51	58	39
C. Interior . . . . .	80	60	66	42	42	42	67	73	54	73	51
(Building faces) . . . .	...	S	W	W	S	N	E	E	E-W	E	N
III. Service Systems . . . . .	280	212	219	160	155	167	215	218	165	218	136
A. Heating, ventilation . .	70	55	60	40	35	40	60	60	50	60	40
B. Fire protection . . . .	65	42	50	32	29	32	51	48	37	48	31
C. Cleaning system . . . .	20	10	10	15	20	20	15	15	10	15	20
D. Artificial lighting . . .	20	15	15	10	10	10	15	15	10	15	10
E. Electric systems . . . .	15	13	9	0	0	2	5	0	0	0	0
F. Water supply . . . . .	30	25	25	20	20	20	23	25	20	25	20
G. Toilets . . . . .	50	47	42	33	31	33	36	45	30	45	5
H. Mechanical systems . .	10	5	8	10	10	10	10	10	8	10	10
IV. Classrooms . . . . .	290	252	267	190	212	200	252	264	239	264	185
A. Location, connections .	35	30	35	30	35	35	35	35	30	35	35
B. Construction, finish . .	90	81	84	65	67	66	84	87	77	87	65
C. Illumination . . . . .	85	78	83	50	50	50	78	78	67	78	45
D. Cloakrooms . . . . .	25	15	20	10	10	10	20	20	15	20	8
E. Equipment . . . . .	55	48	45	35	50	39	35	44	50	44	32
V. Special Rooms . . . . .	140	119	53	45	35	45	53	76	60	76	47
A. General use . . . . .	65	48	7	10	5	7	10	28	20	28	9
B. School officials . . . .	35	31	16	5	0	8	8	8	10	8	8
C. Others . . . . .	40	40	30	30	30	30	35	40	30	40	30
Total Score . . . . .	1000	836	802	623	631	634	786	837	695	834	596



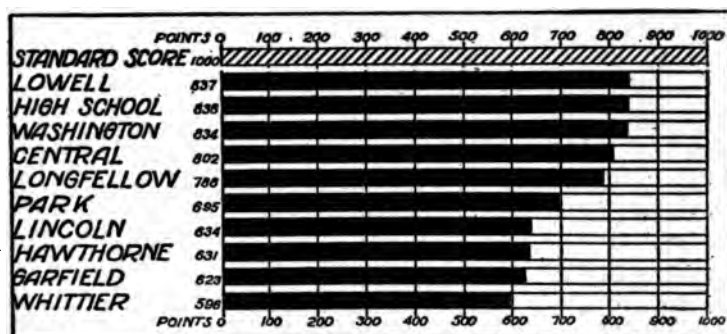


FIG. 30. GROSS EFFICIENCY RATINGS OF BUILDINGS, BY STRAYER SCALE

total scores are a good relative index of the general efficiency of the buildings. The ten Boise buildings obtained a total score of 7274 points. By the standards used it may be said that the efficiency of the school plant is approximately 73 per cent.

Let us now review in detail the observations on which the scores were based. The outline follows the items as they appear in Dr. Strayer's scale.

#### THE SCHOOL GROUNDS

The sites chosen, on the whole, are highly favorable from the standpoint of accessibility and environment. All but the Park School are located in residence districts, which are relatively free from noise, smoke, etc. Dusty streets are found in many of these districts, but with the improvement of street sprinkling and the extension of paving this objectionable feature will be removed. The accessibility of most of the schools to the homes of the children is especially commendable.

The Park School has a most unfortunate location. Its proximity to the railroad yards and business streets noticeably impairs the school work. Often in warm weather it is necessary to close the windows in some of the classrooms be-

cause of the clouds of black smoke and soot which drift in from locomotives across the street. The noise from passing trucks and trains frequently interrupts the class work. It is dangerous for children to have to cross business streets, going to and from school. Traffic regulations should be rigidly enforced on the three streets which intersect at the corner of the school grounds. A special officer should be stationed at this point. It would seem that the value of this property and its unsuitability for school purposes should lead to its conversion to other purposes.

In most cases the soil is suitable for satisfactory drainage. There should be sufficient slope on all sides of the buildings so that the water will quickly run off. In the Lowell and Longfellow schools there is room for improvement in this respect.

The grounds range in size from 10,000 square feet (Garfield) to 66,600 square feet (Lowell). There is usually sufficient space to allow from 50 to 100 square feet of play space for each child. This minimum presupposes, of course, that the slope of the grounds is adapted to play purposes.

Some of the more important facts relative to sites and buildings are shown in Table 39.

#### PLAYGROUND EQUIPMENT

There is practically a total absence of playground apparatus in the Boise schools. The entire equipment consists of one portable slide, which is passed around from school to school and which happened to be at the Garfield School at the time of the survey. In two of the schools rough turning bars had been made by the older boys. The playgrounds are as handicapped as schoolrooms would be if there were no desks, books, or pencils. There is some doubt as to whether the playground can be said to be less important than the classroom. Without adequate facilities for organized play the children are deprived not only of the enjoyment they deserve, but also of real necessities for their proper

TABLE 39

MISCELLANEOUS DATA ON SCHOOL PROPERTY IN BOISE FROM FIGURES  
SUPPLIED BY SUPERINTENDENT OF BUILDINGS AND CLERK OF BOARD  
OF TRUSTEES

Property	Date of Building	No. of Classrooms	No. of Special Rooms	Size of Building	Cost of Building	Size of Grounds	Cost of Grounds	No. of Pupils
High school	{ 1902 1908 1912 }	..	..	....	\$213,000	280 X 300	\$45,000	920
Central . . .	1905	15	3	85 X 128	55,000	150 X 300	14,000	387
Garfield . . .	1899	10	..	62 X 75	20,207	$\frac{1}{2}$ (150 X 200)	2,250	251
Hawthorne . .	1900	4	..	36 X 55	6,000	1 acre	7,500	103
Lincoln . . .	1896	6	1	70 X 72	12,000	122 X 150	14,000	178
Longfellow . .	1905	13	1	66 X 128	50,000	122 X 300	10,000	431
Lowell . . .	1913	9	1	64 X 102	31,234	244 X 300	5,000	244
Park . . . .	1902	..	..	64 X 79	....	....	....	...
	1911	16	1	52 X 104	41,208	$\frac{1}{2}$ (309 X 468)	15,000	415
Washington . .	1912	8	1	64 X 102	47,000	244 X 300	15,000	277
Whittier . . .	1894	7	2	68 X 78	18,000	122 X 300	9,000	221
Roosevelt <sup>1</sup> . .	1920	8	4	63 X 120	60,000	244 X 300	8,000	...
Athletic Park .	....	..	..	....	....	40 acres	21,500	...
Agric. tract . .	....	..	..	....	....	122 X 200	8,000	...

<sup>1</sup> Roosevelt building now under construction.

development. A relatively large vacant space is in itself no longer considered a "playground" in the present-day conception of education. There should be at least a minimum allotment of standard apparatus for every school, based upon the distribution and the ages of the pupils.

#### ORIENTATION OF BUILDINGS

All four directions of the compass are represented in the facings of Boise school buildings. Three face east, two west, two south, two north, and one (Park) has frontage on both

east and west. Evidently their orientation has been determined by chance, rather than by the requirements of school efficiency. The direction which a building faces often has much to do with the amount and direction of the light in the classrooms, the exposure to storms, the danger from ice-coated or wet steps, and other factors definitely related to the welfare of the children.

The position of the building on the site is another important matter in which external appearance, rather than utility, is permitted to be the deciding factor. Many of the Boise buildings are located at such points that an efficient playground cannot be made from the remaining space. The Park School (Fig. 31) is an example of such placing. The Longfellow, Central, and Whittier schools also divide the site to the disadvantage of the playground. Improvement in this respect must be confined to the location of future buildings.

#### TYPE OF BUILDINGS

All buildings are of the two-story-basement type. The older buildings are square, with shingled sloping roofs. The newer ones are rectangular, with flat roofs. All are constructed of brick, six being of pressed or hard brick. None of the buildings may be said to be strictly fireproof. All are apparently in good repair, indicating good supervision on the part of the building inspector. The general appearance of most of the buildings is pleasing. They have evidently been built for strict utility, and are commendably free from the extravagant architectural features which characterize the schools of some cities. As a group they are, in appearance, creditable public buildings.

#### INTERIOR CONSTRUCTION

Practically all interior work, including walls, floors, and stairways, is of wood construction. Stairways at Lowell and Washington and in the newer part of the high school are overlaid with composition material, which adds much to

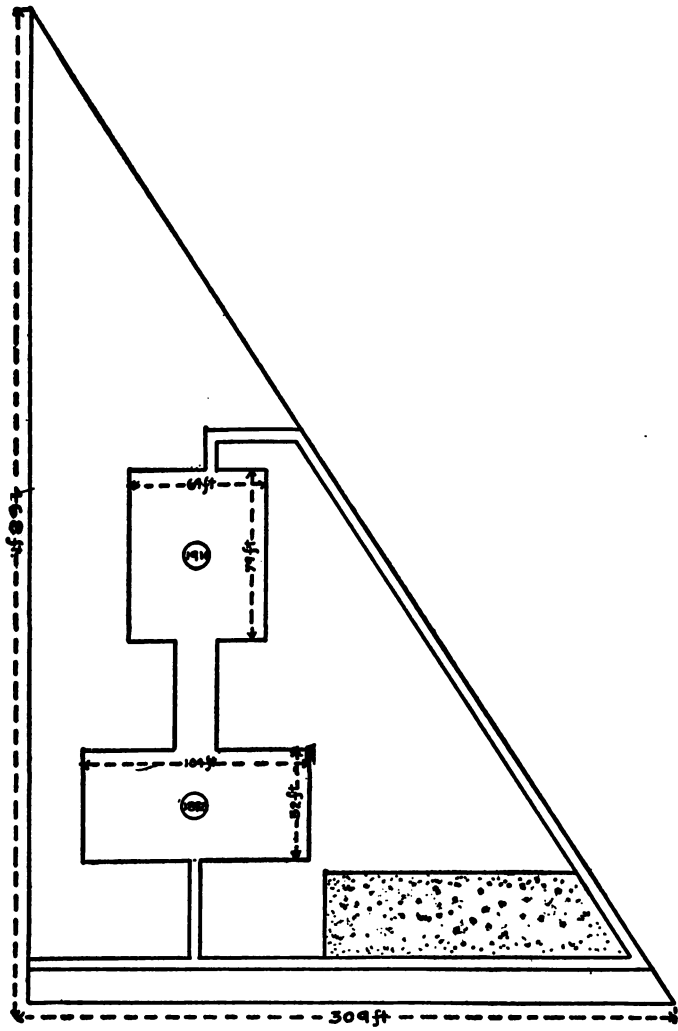


FIG. 31. PLAN OF SCHOOL GROUNDS AT PARK SCHOOL  
(From measurements made by principal and pupils)

their efficiency. In the other buildings the wooden steps, with the usual noise, dust, and unevenness due to wear, are noticeable features of the buildings. The resulting risk from fire should call for special attention. All banisters are of wood, and in no case is there a lower one for the small children.

The corridors appear to be left-over space rather than to have been definitely planned. In the older buildings they are too narrow and too poorly arranged to allow for proper lighting and ventilation. In the Central School the wide hallway is used as an auditorium, in the absence of any other space for assembly purposes. Corridors should range from 11 to 13 feet in width, should be well lighted and ventilated, suitable for decorations, but should not be used for classrooms. The requirements are satisfactorily met in the Lowell and Washington schools. All corridors were found relatively clean and free from obstructions. There is a noticeable lack of decoration as one enters the buildings.

#### BASEMENTS

All buildings are equipped with basements, which are generally utilized for furnace, storerooms, and toilets. In most cases they are deeper than should be allowed, and in several instances the walls are not made waterproof. Lighting, ventilation, and heating in these rooms are wholly inadequate. A basement room that cannot be made sanitary should be abandoned for any school purpose. At Lincoln, Central, and the high school, the janitors live in this underground space. At the Longfellow School the janitor has but recently moved out. The writer closely inspected these quarters, and does not hesitate to pronounce all of them unfit for human habitation. The stained and crumbling walls in the rooms formerly occupied by the janitor's family at the Longfellow School were alone sufficient justification for his exodus. At the other schools in which janitors live the conditions are fully as unfit. Inadequate toilet and

laundry facilities, lack of ventilation, and the necessity for almost constant use of artificial light cause one to wonder how any saving can be effected by inducing janitors to occupy such places.

The furnace rooms are for the most part located in dark parts of the basement, access to which is not easy. A splendid example of well-lighted and conveniently arranged furnace room is that of the newer wing of the high school. This stands in striking contrast to the dingy living quarters of the janitor in the other end of the building.

#### HEATING AND VENTILATION

The heating plants of the new buildings are of the plenum type, but various sorts of systems, even to the use of stoves, may be found in the city. The most satisfactory plants are those at the Lowell, Washington, Central, and Longfellow schools. These plants, however, are more strictly for heating purposes, and little or no correct ventilation is obtained from them. Although air from the outside is drawn in, there is no provision for washing it or adding moisture. At the Longfellow and Central schools the intakes are located just above the level of the playgrounds, and clouds of dirt are constantly blown into the classrooms by the fans. The discolored walls and ceilings show but one of the minor results of this. The injury to the health of the children is not so apparent but is of vastly more importance. At the high school one of the intakes is located in a hidden nook just above the level of the ground on the flat roof of the furnace room, a space which serves as a general catch-all for blowing dirt, trash, etc. Such an intake is very unsatisfactory but could be greatly improved by elevating the intake shaft to a higher level, a change that would be feasible and inexpensive.

One of the greatest limitations in the heating plants of the Boise schools lies in the absence of any method for adding moisture to the warmed air which the fans force into

the schoolrooms. Increasing the temperature of the air in the winter to the extent necessary for heating decreases the ratio of moisture as much as 60 or 70 per cent. In other words, the air taken into the furnace rooms on an ordinary winter day is delivered to the pupils with perhaps one third as much moisture as the same volume of air originally contained. As a result, the air of some schoolrooms is drier than that of a desert. Moreover, as already suggested, it may be accompanied by many dust particles which attack the dry membranes of the nose and throat. The resulting danger from contagious diseases, to say nothing of the discomfort to pupils and teachers, is greater than is commonly realized. Several methods have been devised for introducing moisture into warmed air, and their cost is more than compensated by the lessening of one of the greatest evils of the schoolroom.

#### FIRE PROTECTION

In the recent survey of the schools of Denver, Dr. Terman wrote concerning fire protection in the schools:

Notwithstanding the large number of school buildings of old construction, and notwithstanding the many antiquated heating plants still in use, the school children of Denver are well guarded from the danger of fire. All the buildings having two or more stories are reasonably well supplied with fire escapes. Nearly all classrooms are provided with two doors, and panic bolts are to be found on the outside doors of all buildings.

Although similar conditions prevail in Boise with reference to the age of school buildings and the dangers from other sources, it cannot be said that the children are "well guarded from the danger of fire." There are but two fire escapes in the entire school plant. One of these is at the Garfield School, opening from a window of the attic, which is used for a classroom. The other is at the rear of the Hawthorne School and is made entirely of wood. There is not a panic bolt in the entire city, and many classrooms have but one



door. No building is equipped with fire doors. Four of the buildings — Whittier, Hawthorne, Garfield, and Lincoln — have no fire hose. In the other schools the water connected with the fire hose is turned off in the basement at what seems to be the most inaccessible point in the building. In the Longfellow and Park schools it is necessary to crawl through dark passages in order to reach the tap. This is due, the survey staff was told, to the supposition that if the fire hose could be turned on from the halls it would be tampered with by the pupils.<sup>1</sup>

All buildings are equipped with some form of hand extinguisher, although the supply is insufficient. In some instances these, too, are in places which are not readily accessible. Teachers and principals should be better instructed with reference to the location and use of apparatus. One teacher stated that for several years she has had a fire extinguisher hanging near the door of her classroom, but that she had not the remotest idea how she would make use of it in case of fire. Some teachers do not know where the extinguishers are located. It would doubtless require some time for them to find one during the excitement of a fire.

The fire alarm is sounded on the regular school gongs, which are of the spring type, operated by pulling a cord. There are no electric signals and no connection with the city fire department except where out-of-door alarm boxes occur near the school. In most cases it is necessary to cross the playground or the street to reach the alarm. There is no method of signaling from the basements or upper stories, the gong usually being operated from the main floor only.

The electric wiring appears to have been well done and has been subjected to rigid inspection. Protection from this source, however, should be systematically considered.

<sup>1</sup> The writer made special inquiry on this point, and found that the principals, with one exception, believed this excuse to be absolutely groundless. It is purely a matter of supervision, they said, whether or not pupils tampered with the hose. Even if it were true, we are unable to see how such an order could have been given, when the very lives of the children are at stake.

The fireproofness of the buildings has already received comment. The fact that all are of inflammable construction should in itself be sufficient reason for better extinguishing apparatus. Eleven years ago the disastrous school fire at Collinwood, Ohio, occurred. The origin of the fire is unknown, but it was supposed to have resulted from defective furnace piping. The building was a two-story brick structure, with wood floors, stairways, and partitions, as are the schools in Boise. In type it resembled the Garfield, Lincoln, and Whittier schools, except that it was provided with iron fire escapes and panic bolts on all outside doors. When the fire alarm was sounded the children in the upper classrooms passed through the coat rooms, which open into the corridor, as they do in Boise, and crowded together in the hallway. Before the congestion could be relieved the flames swept through the building, and 173 children and 2 teachers were burned to death. Although Boise has had no such experience as yet, the tragedy could be repeated here at any time. No efforts should be spared to secure the best protection possible to the lives of the children.

Special commendation is due for the excellence of the fire drills in the Boise schools and the frequency with which they are held. The writer has never seen school buildings emptied more quickly and with less confusion than he witnessed in Boise. Every building was emptied in less than one minute, and in some cases the entire time consumed, from the ringing of the gong to the exit of the last pupil, was but 40 seconds. While this does not, and cannot, entirely make up for the lack of other fire protection, it is a relief to know that such an excellent practice is in effect.

#### CLEANING SYSTEM

No mechanical systems for cleaning have been installed. Janitors use brooms and sweeping compound. An ample supply of the compound was found in all buildings, and no difficulty seems to be encountered in securing enough for its

daily use. Feather dusters have been abolished.<sup>1</sup> On the whole, the buildings were found to be clean and orderly. Floors are cleaned and oiled once a year. In Boise this is not sufficient, as may be inferred from the large areas from which the oil has been worn off. The nature of the soil in this locality is such that it acts almost with the efficiency of sand-paper when adhering to the soles of shoes. Wherever oil is thus removed, the floor becomes absorbent and retains particles of dirt with the disease germs that often adhere to them. Three or four oilings a year would be none too many. Vacuum-cleaning systems should be installed in future buildings.

Windows are washed twice a year in most of the schools. All instructions relative to such matters are issued by the superintendent of buildings, and principals are not authorized to issue modifying or additional orders. Some of the bad results of this may be observed by visitors to the schools. The necessity for placing janitors under the direct supervision of the principal is referred to elsewhere in this report.

#### ARTIFICIAL LIGHTING

Provisions for illuminating the school buildings during the evenings or on dark days are inadequate. Electric wiring is limited chiefly to the principals' offices, halls, basements, and a few classrooms. In anticipation of the wider use of the school plant for community service, all buildings, or at least the newer ones, should be well equipped for electric lighting.

#### CLOCKS, GONGS, TELEPHONES

Electric bell systems connected with clocks have been installed only in the high school and at the Cen-

<sup>1</sup> One janitor, evidently under the impression that the prohibition of feather dusters was purely a matter of economy on the part of the board of education, purchased one himself and generously contributes its daily use to the school. He was highly surprised when told that the ruling was based on hygienic principles. This suggests the need for a lecture course for janitors.

tral School. The latter system has been out of order for some time, and was not operating during the survey period. A general lack of clocks, even of the ordinary type, was noted. All schoolrooms should have clocks, preferably self-winding, with central and bell connections.

Gongs are operated by hand. These should be replaced as soon as possible by electric gongs which may ring by push button from all parts of the building. This is especially necessary for purposes of sounding the fire alarm. There should also be connections with the city fire department, to avoid the delay resulting from finding the fire alarm box on the street.

One of the most serious needs in the physical equipment is for telephones. Even at the high school there are but three, including those in the offices of the superintendent and principal. None is provided for the elementary schools. The amount of time wasted during the course of a school year, if it could be accurately tabulated, would probably convince any one that no economy is effected by the lack of communication facilities. In one school the teachers contribute to a fund for part rental of the telephone in the janitor's basement quarters. In one instance the principal pays for the use of a telephone in a neighboring residence. Boys are taken from their classes to carry messages which could be just as well conveyed by telephone. When we realize that modern school buildings are being equipped with regular telephone connections, with private systems connecting all classrooms, we may justly urge improvement of the Boise schools in this respect.

#### DRINKING FOUNTAINS

Drinking fountains are provided for all schools, but in insufficient number, at least in the elementary schools. All fountains are located indoors. The "drinking line" following recess periods, a characteristic feature in the Boise schools, testifies to the need for more fountains. The chil-

dren enter the building in single files, one column for each fountain, and drink each in turn. Although in most instances this was carried on with reasonably good order, the method does not lend itself to the best results. The necessity for hurried, formal stops prevents some children from drinking all they want and drinking in the correct manner.<sup>1</sup> The writer observed instances of children passing by the fountain without drinking, rather than go through this formality.

It appears that the distribution of drinking fountains has been governed, if at all, by factors other than the distribution of the children. At the Lincoln School, for example, there are four fountains for about 180 children. At the Longfellow School the same number of fountains are provided for 440 children. There are also four each in the Whittier School for 221 children and at Central for 387 children. These are located in the ends of the halls, two on each floor, their use being confined largely to the period of the "drinking line." The location of fountains should be based upon their accessibility at times when children are most apt to want a drink, and the number should be based upon the number of children using them. All playgrounds should be provided with fountains in addition to the regular number indoors. There should be a fountain for every 75 children. The drinking of plenty of fresh water during the day is a health requirement that the schools can well afford to encourage with an adequate supply of cool bubbling fountains.

#### LAVATORIES AND BATHS

Wash basins have been installed in the basements of most of the buildings, but no bathing facilities are provided in the elementary schools. School baths are imperative if health and sanitation are to be properly taught. Showers could be

<sup>1</sup> A special observation was made at one of the schools relative to the correct use of the drinking fountains. Nearly one half of the children observed touched the metal parts with their mouths. This is due, perhaps, not so much to haste as to the lack of instruction.

installed in all buildings at relatively small expense. Their cost would be more than compensated by the educational and social results which could be obtained from their use. Fortunately, roller towels and common soap have been banished from the Boise schools.

#### TOILETS

In Dr. Strayer's 1000-point scale for grading buildings an allowance of 50 points is made for toilets. The schools in Boise grade from 5 to 47 points in respect to this item. The best systems were found at the high school, Lowell, Washington, and Central. The others may be said to be distinctly inferior. They are inadequate, poorly located, and unsanitary. Little or no effort has been made to grade the height of the seats according to the size of the pupils. The automatic flushing system which operates only during recess periods or at the option of the janitor should be replaced by a more up-to-date system. In some cases the intervals between flushing is too long. At times the system fails to operate. It is the common practice of the janitor to turn the water on only during recess and play periods, notwithstanding the fact that they are used by the children during the regular school hours. This illustrates another significant result of keeping from the principals the authority for janitorial supervision.

The worst toilets are those of the Park and Whittier schools. The former are located in the passageway between the old and new parts of the building. (See plan in Figure 31.) Were it not for the fact that they are above ground and well lighted, they could be justly condemned. In order to pass from one part of the building to the other, it is necessary to go either through these toilets or to use a frame bridge which has been attached to the exterior of this connecting section. The arrangement makes the toilets accessible, however, both from the playgrounds and from other parts of the building.

The Whittier toilet is one of the worst the writer has ever seen at a city school. Located in a small, flat-roofed building without windows, it receives no light, heat, or ventilation. Were it not for the assistance of the janitor, in whose hands rests the authority to turn on the electric light, the interior of the building would have been in total darkness. The use of this light, the janitor stated, is limited to recess and play periods. This toilet is equipped with the "range" system of seats, the flushing of which automatically occurs every 15 to 18 minutes between the hours of 10 and 3 only. The two sides, for boys and girls respectively, contain but five seats each, all of the same height, and a single roll of toilet paper is provided in each division of the building. The floors and walls are damp, and the place could be no less sanitary if it were located 50 feet underground. The building inspector concurs in the writer's opinion that this toilet should be immediately condemned.

Few of the buildings are provided with separate rolls of toilet paper for each seat. The argument that to do so would result in the occasional waste of paper should be ignored, in the light of health and sanitation. The toilet rooms should be thoroughly disinfected and cleaned at regular and frequent intervals. Wherever possible, provision should be made for letting more daylight into these rooms. The floors and walls should be more often treated with a non-absorbent. Cement is not a satisfactory material for toilet floors by reason of the almost unpreventable action produced by uric acid. Asphalt or tile floors are far superior. The toilet rooms should be as well lighted and as clean as any other room in the building. Their location in the basement should call for additional emphasis on these points, rather than serve as an excuse for their negligence.

#### CLASSROOMS

As a rule, the classrooms have been well located and have received considerable attention in the planning of the build-

ings, at least as regards accessibility and convenience. They approach the standard size and shape as well as may be expected from the age of the buildings. The floors are generally of hard wood and are in good condition. The doors open outward and in the newer buildings are constructed without thresholds and transoms. The walls are hard, durable plaster, although of an undesirable rough finish in some buildings.

## BLACKBOARDS

Of the 86 classrooms reporting, 53 were equipped with slate blackboards, 25 with coated plaster, and 8 with composition boards. The newer buildings are equipped with slate. The plaster and composition boards are unsatisfactory, as they crack easily, wear smooth, and are subject to other limitations. Slate or ground-glass boards should be substituted for these wherever possible.

Measurements made by the teachers show that the blackboards in many of the rooms are set without much regard for the heights of the children who use them. The standards for school-building construction call for a carefully graduated scale of heights, from grade to grade, ranging

TABLE 40

HEIGHT OF BLACKBOARDS (FROM FLOOR TO CHALK RAIL) IN NEWER BUILDINGS OF BOISE, IN COMPARISON WITH STANDARD HEIGHTS. MEASUREMENTS MADE BY TEACHERS

Grade	Standard	Central	Longfellow	Lowell	Washington
8 . . . . .	30 in.	40 in.	39 in.	32 in.	....
7 . . . . .	30 "	36-39 "	39 "	32 "	....
6 . . . . .	28 "	31 "	39 "	31-34 "	30-34 in.
5 . . . . .	28 "	30-40 "	36-39 "	32 "	30-34 "
4 . . . . .	26 "	30-40 "	30 "	34 "	31-32 "
3 . . . . .	26 "	31 "	31 "	26-34 "	28-34 "
2 . . . . .	24 "	29-40 "	30 "	26-34 "	28-34 "
1 . . . . .	24 "	40 "	30 "	32 "	....



from 24 to 30 inches for the elementary schools and from 32 to 36 inches for the high school. The comparison for three of the newer buildings is shown in Table 40. These are representative of the whole city. Wherever the boards are too high, as in the case of the lower grades of the Central School, they should be lowered, or a platform built underneath to bring the children to the height necessary. Of these two corrective measures, the former has more advantages. In the Lowell School, one of the newest in the city, the blackboards are consistently too high. In future buildings the standard heights should be insisted upon.

#### LIGHTING OF CLASSROOMS

Approximately one half of the classrooms in the Boise schools are correctly lighted. Five of the buildings are constructed for unilateral lighting, with reasonably satisfactory distribution. Four of the buildings, Garfield, Hawthorne, Lincoln, and Whittier, have retained the back-left lighting, together with other undesirable features common to buildings erected twenty years ago. The standard ratio of one-fifth glass area to floor area is obtained in about two thirds of the classrooms. The distribution may be seen in Figure 32.

Of a total of the 83 rooms reporting, 18 are provided with one square foot of glass to every four square feet of floor space. In 37 rooms the ratio is 1:5; in 13 rooms, 1:6; and in 11 rooms, less than 1:6. In one room the teacher's meas-

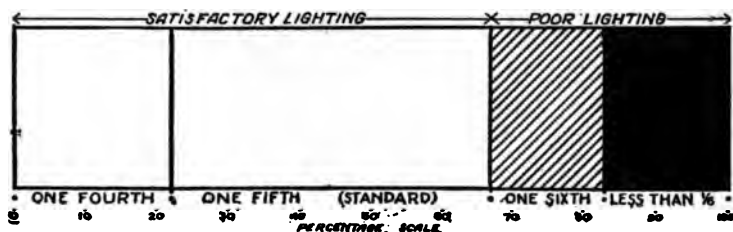


FIG. 32. DISTRIBUTION OF WINDOW-GLASS AREA IN BOISE SCHOOLROOMS

urements revealed a ratio of 1:18. There are perhaps 800 children in Boise who regularly attend classrooms in which the construction of the building makes it impossible to secure sufficient daylight.

#### WINDOWS

Fully as important as the glass area is the location of the windows. The lighting of schoolrooms exclusively from the pupils' left, as shown in Figure 33, has long been an accepted standard for school buildings. Windows on two sides of the room, however, were found in 5 schools and in a total of 24 rooms.<sup>1</sup> In many of these rooms the windows have been placed far enough apart so that the intervening space may be used for blackboards. This causes the light to enter in streaks, and often the pupils' desks are located in the shadows. Photometric tests which have been made in rooms of this kind show that such places are so dark that eye strain is sure to result from their use. Few business men would tolerate such lighting in their offices. The space between windows should never exceed 12 inches, and it is preferable to have the windows in steel frames which entirely replace the part of the brick or stone structure which occurs in the lighting area.

Rear windows should be permanently blocked, or at least treated so as to minimize their blinding effect. Not only is the teacher compelled to face them for long periods, with resulting eye strain, but every pupil is directly in his own light. The cross lights in rooms lighted from two sides produce numerous evil effects.

#### WINDOW SHADES

The window shades, except in the Lowell and Washington schools, are unsatisfactory. The common opaque green shade suspended from the top of the window only serves to cut down the amount of light and to eliminate the light nearest the ceiling, which is the most essential part. The

<sup>1</sup> The Longfellow School has unilateral lighting in all but one room.

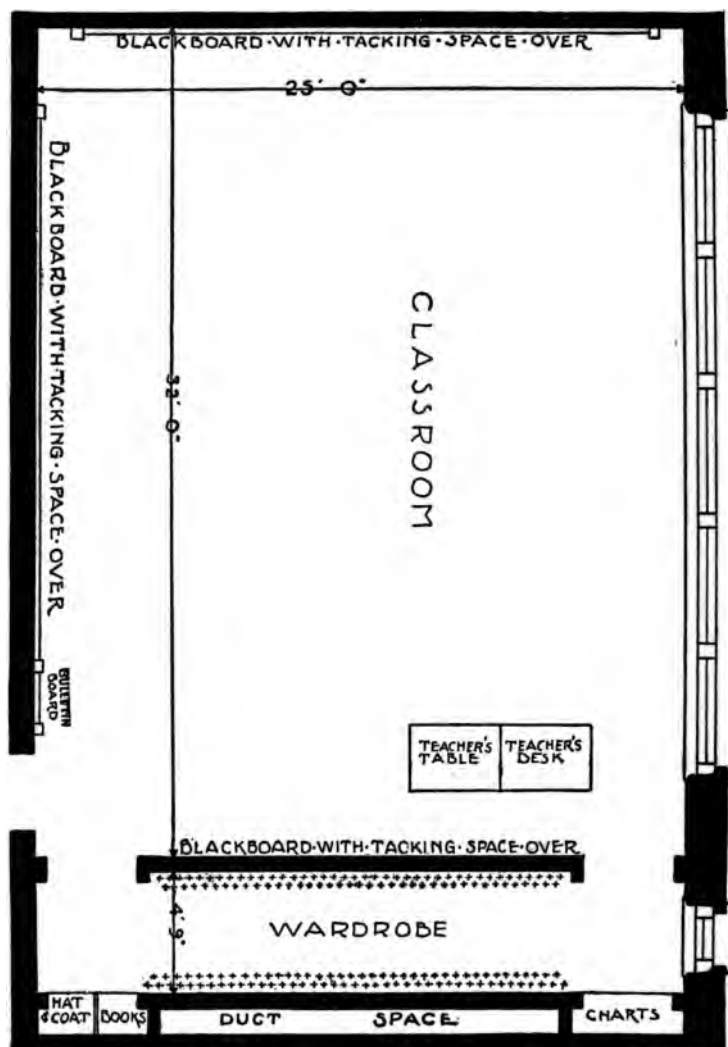


FIG. 33. PLAN DEVISED BY A CLEVELAND ARCHITECT FOR THE SCHOOLS OF THAT CITY. (Reproduced by Dr. Ayres in the Cleveland Survey Report)

figures showing that two thirds of the rooms have sufficient light only apply with the shades removed from the windows. Most teachers do not know how to operate window shades, and cannot be expected to learn with the window equipment provided. The writer visited rooms having the standard one-fifth window to floor area in which the position of the shades reduced this proportion to less than one tenth. In fact, it is quite common to find but one half of the window space in use where opaque top-rolling shades are used. Some teachers apparently think that the appearance of their room is improved by keeping the shades pulled down to the middle of the window. If the shades rolled at the bottom, the same æsthetic effect could be produced with better lighting results. Correctly built window shades are completely adjustable, and are made of translucent material. The purpose of a shade is not to cut down the amount of light, but only to prevent direct sunlight from striking the desks. Translucent shades diffuse these direct rays without the total loss of light. With better knowledge of correct lighting and with better equipment, teachers may be relied upon for more uniform results.

#### CLOAKROOMS AND WARDROBES

Cloakrooms are mostly of the closed type, and do not lend themselves to good lighting, ventilation, or ready supervision. Future buildings should have wardrobes constructed with classroom connections, as shown in Figure 33.

#### CLASSROOM EQUIPMENT

Seats and desks are of the stationary, non-adjustable type, except in the Park School and in a few rooms in other buildings. At the Longfellow School many desks are incorrectly placed, and can be changed only by laborious effort involved in removing and replacing the screws by which they are secured to the floor. The placing and adjusting of desks should always be done under the direct supervision of the principal, and not left to janitors or carpenters.

Teachers' desks are all placed on the floor, usually to one side of the room, without platforms. This is to be commended. The teacher's platform, inherited from the early schools, is still too frequently found in other cities.

Classroom bulletin boards were found in several schools. These are a valuable asset to the teachers, and their wider use should be encouraged. Teachers who have them speak highly of their instructional value. Tacking space over the blackboards should be provided wherever possible.

#### SPECIAL ROOMS

In regard to this item the Boise schools are especially limited. There is not an auditorium, library, gymnasium, lunch room, or satisfactory playroom in any of the elementary schools. The need for playrooms is especially urgent, as testified by the efforts made by the principals to utilize vacant space for this purpose. The basement rooms at the Washington and Lowell schools serve in an emergency, but in view of the many purposes to which it is necessary to put them, do not satisfactorily meet the needs of the school. Fortunately, the climate of Boise permits of many out-of-door days for play. The lack of gymnasiums is a good argument for the better equipment of the playgrounds. The use of corridors for auditorium purposes is not the best practice, because of the inadequate heating, lighting, and ventilation. The eating of lunches in the classrooms is not to be encouraged. Relatively few of the children in Boise bring their lunches, however, and there are indications that satisfactory supervision is obtained for those who do remain over the noon hour.

The newer buildings contain principals' offices, but in the older ones it has been necessary to resort to makeshift. The present teaching schedule for principals leaves little time to attend to office duties, but the need is none the less important. The business of a large school like Park cannot be efficiently transacted in a blocked-off hallway. Rest rooms

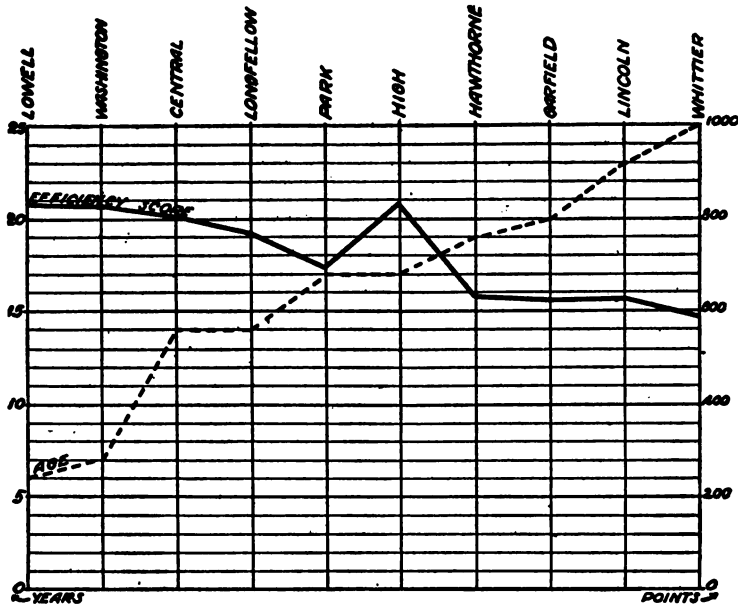


FIG. 34. RELATION BETWEEN AGE AND EFFICIENCY OF BOISE SCHOOL BUILDINGS

for teachers are also too few in number. In no case has the school provided proper equipment for these. The rest room at the Central School was furnished by donation from the teachers. In most of the other schools the principal's office serves in lieu of other special rooms. The school nurse uses the hallway where other space does not happen to be vacant. Janitors have no separate rooms, except where basement living quarters are provided, and usually sit in the furnace room or in the hallway.

#### AGE AND EFFICIENCY

That the efficiency of a building decreases with age is not surprising. Many of the items on which efficiency is judged

refer to improvements of relatively recent origin. Where buildings have been reconstructed, or where additions have been made, the improvement of the general quality of the school has usually followed. This is manifestly true of the high school. The two newer wings make up for many of the shortcomings of the old central portion.

The interesting relation between age and efficiency in the Boise school buildings is shown in Figure 34. The arrangement of the elementary schools according to their ratings is exactly the reverse of their arrangement according to age. The newer the building, the higher its score.

This relation is not entirely due to the structural advantages of the newer schools. Poorer equipment is tolerated in an old building than would be permitted in a new one. This distinction is often unconscious on the part of school officials, but it is common. Even an acknowledgment of the greater danger from fire is not made apparent by more extensive equipment in old buildings. These conditions may easily be corrected.

#### SUMMARY AND RECOMMENDATIONS

1. The school plant in Boise, although favorable in some respects, presents one of the most important educational problems in the city. None of the buildings attains the standard, and many are far below. Some of the older buildings, including Hawthorne, Garfield, Lincoln, and Whittier, should undergo some reconstruction or be replaced by modern structures.

2. The average rating of the buildings on the Strayer Scale is about 73 per cent. The buildings score from 596 to 837 on a scale of 1000 points.

3. The locations of the schools, with the exception of that of the Park School, are desirable and convenient. The grounds meet the standard minimum for play space, but are entirely devoid of apparatus. It is recommended that standard playground equipment be supplied to all schools.

4. The city is to be commended on the fact that the school buildings have been constructed for utility and are consequently free from superfluous architectural features.

5. It is recommended that living quarters other than the basement be provided for janitors. The erection of a small portable building on or near the school grounds would be more desirable. The walls and floors of the basements should be better protected from the seepage of water.

6. The heating system should be equipped with facilities for washing and adding moisture to the air driven into the schoolrooms. Intakes should be elevated, wherever possible, above the level of playground and street dust.

7. Fire-protection equipment should receive immediate attention. Every building should be provided with a good fire hose for each floor and a sufficient number of hand extinguishers. Water should be instantly obtainable by turning on the tap at the base of each hose. All buildings should be equipped with metal fire escapes. Electric fire alarms, and connections with the city fire department, should be installed. None of the buildings is fireproof. The older buildings are especially in need of better protection. The fire drills are excellent and deserve commendation.

8. Brooms, with sweeping compound, prevail as the method of cleaning. It would be desirable to have vacuum systems, and provision for such systems should be made in future building plans.

9. Better electric equipment is urged, including artificial lighting, clocks, gongs, and telephones. Every school should have telephone connection with the office of the superintendent.

10. The number of drinking fountains should be increased and they should be distributed according to the number of pupils using them. Playground fountains are especially needed.

11. No baths are provided in the elementary schools. It is recommended that showers be installed wherever practicable.



12. The toilets, except in the newer buildings, are very unsatisfactory. It is recommended that all toilet rooms be provided with more light, better ventilation, and with non-absorbent floors and walls. The range system should be replaced by individual flushing systems. While the range system remains, it should be operative throughout the day. Seats should be better graded as to height. A separate roll of toilet paper should be provided for each seat. The dungeon-toilet at the Whittier School should be condemned.

13. Blackboards of plaster or composition should be replaced by slate or ground glass. The height of blackboards should be governed by standard requirements.

14. Approximately two thirds of the schoolrooms have the standard ratio (1:5) of window space to floor area. This is satisfactory, where it comes exclusively from the pupil's left, and is unobstructed, as in about one half of the rooms. Many classrooms are not only deficient in window area, but the placing of the windows renders correct lighting impossible. It is recommended that if the older buildings are to be retained, immediate steps be taken to reconstruct them so that all classrooms will have unilateral and sufficient lighting. It is further recommended that the present opaque shades be replaced by adjustable, translucent shades and that teachers be instructed as to their proper use.

15. The preponderance of stationary, non-adjustable seats and desks makes it impossible to seat children according to their varying sizes. At least one third of the seats and desks in each room should be adjustable, and their adjustment should be supervised by the school principal.

16. Commendable use of bulletin boards was observed in several schools. The continuance and extension of this practice is recommended.

17. The lack of special rooms prevents the development of newer and more efficient educational methods. It is recommended that future buildings be equipped with playrooms, auditoriums, libraries, gymnasiums, lunch rooms, and modern rooms for school officials, including the school nurse.

18. It is evident that buildings scoring relatively low on the standard scale can be brought much nearer the standard by improvements which require little or no structural changes. Among these are the equipment of playgrounds, the improvement of basements and ventilation systems, better equipment for fire protection, increase in number and better distribution of drinking fountains, improvement of toilets, replacement of blackboards, and more extensive use of adjustable seats and desks. The improvements which require some structural change, including the introduction of baths, the reconstruction of toilet rooms and the securing of unilateral lighting, are, however, of no less importance. The cost of these improvements should not be looked upon as innovation expense, but the change should be viewed as necessities which have not received timely attention in the development of the school system. The present lack of many essentials is suggestive evidence of the lesser cost of a uniform educational growth in which equipment keeps pace with other developments.

In the preparation of this chapter the writer has been fully conscious of the danger that such a section, which must of necessity be critical, may be misinterpreted. He has been reluctant to call attention to some of the long-standing defects in the physical equipment, but on the other hand he has been guided by the obligation to make judgments on the basis of generally accepted standards. Whatever local reasons may exist for present conditions, the efficiency of the plant can be fairly determined only by plain comparisons with these standards. Fortunately the improvement of the school plant along standard lines can be brought about more quickly, more easily, and at less expense than can educational developments in other directions. It is believed that the adoption of the changes suggested will go far toward giving Boise a modern school system and one that will be a credit to her geographical and economic importance.

The writer wishes to acknowledge his indebtedness to the recent publications of Dr. Fletcher B. Dresslar, of the United States Bureau of Education; Dr. George D. Strayer, of Columbia University; Dr. Lewis M. Terman, of Stanford University; and Dr. Leonard P. Ayres, of the Russell Sage Foundation.

## CHAPTER X

### THE HIGH SCHOOL

(Proctor)

#### ARTICULATION BETWEEN THE ELEMENTARY GRADES AND THE HIGH SCHOOL

**T**HERE is evidence to show that the administrative officers of the Boise public schools are making a genuine effort to bridge the gap between the elementary grades and the high school. Among the plans that have been adopted with this end in view are the following: (a) Departmentalization of the 7th and 8th grades; (b) Beginning of Algebra and General Science in the 8th grade. Departmentalization accustoms the grade pupils to different teachers for different subjects and trains them to more independent study methods. The beginning of Algebra and General Science in the 8th grade gives those who are planning to go to college an opportunity for a more varied course in the high school and tends to influence others to continue their education beyond the elementary grades.

Table 41 gives the distribution of the graduates of the last seven classes graduated from the Boise 8th grade and includes the January and June groups for the years 1916, 1917, and 1918, as well as the January group for 1919, comprising a total of 758 pupils. There are 668 of the Boise 8th grade graduates who have entered the Boise high school, and 4 who have entered other high schools during the 3½ years covered by the table. In all, 672, or 88.65 per cent, of the 8th grade graduates went on to high school. This is a surprisingly good showing when compared with the aggregate grade distribution in 386 American cities.<sup>1</sup> Ayres

<sup>1</sup> Ayres, L. P., *The Laggards in Our Schools*, page 13, Diagram II.

TABLE 41

GIVING THE DISTRIBUTION OF THE 8TH-GRADE GRADUATES OF THE BOISE SCHOOLS, COMPRISING THE JANUARY AND JUNE CLASSES FOR 3½ YEARS

What 8th-Grade Graduates Did	Years and Months								Total	Per cent
	1916 Jan. June		1917 Jan. June		1918 Jan. June		1919 Jan.			
Went to Boise H. S. .	97	102	90	109	80	106	84	668	88.12	
Went to Other H. S. .	..	1	1	1	..	1	..	4	0.53	
Went to Work . . .	3	9	2	6	5	12	..	37	4.90	
Stayed at Home . .	1	..	..	..	1	1	1	4	0.53	
Went to Business Col- lege . . . . .	..	1	..	2	..	2	..	5	0.66	
Entered U. S. Navy .	..	1	1	..	..	..	..	2	0.26	
Moved Away . . .	..	6	..	3	..	8	2	19	2.50	
Married . . . . .	1	1	1	..	1	..	..	4	0.53	
Poor Health . . . .	..	..	..	..	..	1	1	2	0.26	
No Report . . . . .	2	7	2	1	..	1	..	13	1.71	
Totals . . . . .	104	128	97	122	87	132	88	758	100.00	

found that on the basis of 1000 children who entered the first grade there would be found in the 8th grade 263 children and in the 1st year high school 189, or 71.4 per cent of that number. Boise's record for the past 3½ years is 17.25 per cent higher than for the 386 cities considered by Ayres. Less than 5 per cent of the Boise 8th grade graduates gave up further effort to get an education and went to work. These facts are shown graphically in Figure 35.

Table 42 gives the total enrollment, the average enrollment, and the per cent of the total enrollment represented by the average number in the high school for the ten-year period 1909-10 to 1918-19. When we take an average of the per cents that the high school enrollment is of the total enrollment for the five school years 1912-13 to 1916-17

inclusive, the result is an average of 25.7 per cent; for the two school years 1917-18 and 1918-19 (the years when attendance in high school was most affected by the war and the influenza), the result is an average of 24.1 per cent. The average of average per cents for the ten-year period is 23.5 per cent. Referring again to Ayres' statistics for the 386 American cities, we find that the total high school attendance is only 8.3 per cent of the total enrollment, and in the state of California the total average daily attendance in the high

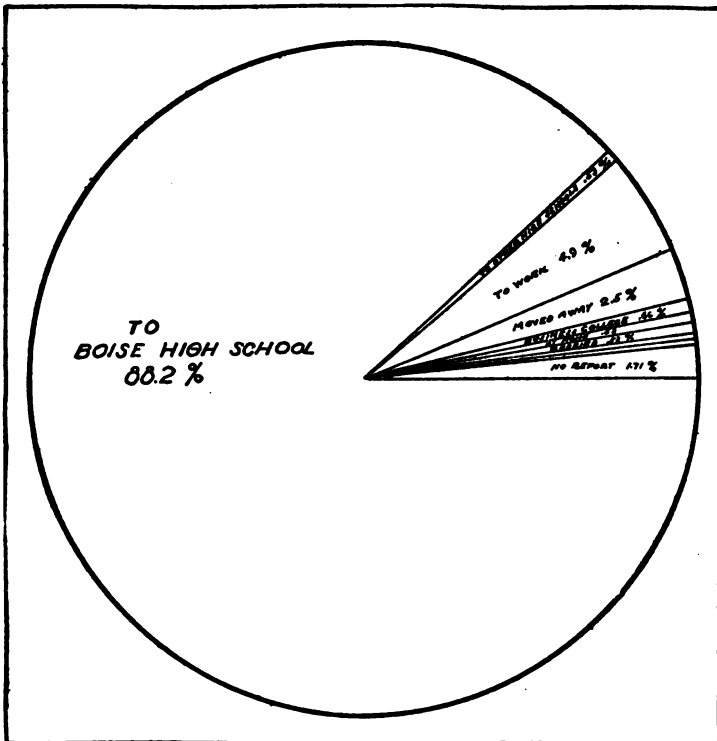


FIG. 35. SHOWING WHAT BECAME OF THE 8th-GRADE GRADUATES FROM THE BOISE SCHOOLS DURING A PERIOD OF THREE AND ONE HALF YEARS

TABLE 42

SHOWING TOTAL ENROLLMENT AND AVERAGE ENROLLMENT OF THE BOISE  
ELEMENTARY AND HIGH SCHOOLS, AND ALSO THE PER CENT OF TOTAL  
AVERAGE ENROLLMENT MADE UP OF HIGH SCHOOL PUPILS FOR A PERIOD  
OF 10 YEARS

Year	Total Gross Enrollment			Total Average Enrollment			Per Cent High School Is of Total Average Enrollment
	High	Elemen- tary	Total	High	Elemen- tary	Total	
1909- 1910	625	2506	3131	519	1913	2432	21.3
1910- 1911	617	3380	3997	517	2548	3065	16.8
1911- 1912	778	3441	4219	667	2661	3328	20.0
1912- 1913	889	3364	4253	719	2690	3409	21.1
1913- 1914	989	3257	4246	837	2359	3196	26.1
1914- 1915	1056	3156	4212	835	2482	3317	25.1
1915- 1916	1050	3024	4074	837	2370	3207	26.4
1916- 1917	1071	3044	4115	806	2326	3132	25.7
1917- 1918	1011	3188	4199	786	2435	3221	24.4
1918- 1919	1051	3330	4381	760 <sup>1</sup>	2433 <sup>1</sup>	3193	23.8

<sup>1</sup> The average enrollment for 1918-19 is taken for the six months ending May 9, 1919. It is considerably below normal on account of the influenza epidemic.

schools is only 15.6 per cent of the total average daily attendance in all the schools, elementary and high school combined.

Table 43 shows how Boise compares with ten other cities in respect to the per cent of high school attendance in its relation to total attendance. Boise ranks 1, with 23.8 per cent; Reno, Nevada, occupies the median place, with 18.1

TABLE 43

SHOWING THE RELATIVE STANDING OF ELEVEN CITIES IN THE PERCENTAGE OF HIGH SCHOOL PUPILS IN TOTAL AVERAGE ENROLLMENT OF ELEMENTARY AND HIGH SCHOOL PUPILS

Name of City	Average Enrollment			Per Cent High School Is of Total Enrollment
	Elementary	High School	Total	
<b>BOISE, IDAHO . . . . .</b>	<b>2433</b>	<b>760</b>	<b>3193</b>	<b>23.8</b>
Walla Walla, Wash. . . . .	2700	800	3500	22.8
Bellingham, Wash. . . . .	3276	888	4164	21.3
Everett, Wash. . . . .	3569	841	4410	19.1
Fargo, N. Dak. . . . .	2577	610	3187	19.1
<i>Reno, Nevada (Med.) . . . . .</i>	<i>1800</i>	<i>400</i>	<i>2200</i>	<i>18.1</i>
Sioux Falls, S. Dak. . . . .	3528	735	4263	17.2
Albuquerque, N. M. . . . .	2500	500	3000	16.6
Trinidad, Colo. . . . .	2325	445	2770	16.1
Cheyenne, Wyo. . . . .	1425	275	1700	16.1
Great Falls, Mont. . . . .	4677	785	5462	14.3

per cent; and Great Falls, Montana, ranks lowest, with 14.3 per cent. Boise's very favorable position among these cities is shown to good effect in Figure 36.

From Tables 41, 42, and 43, it is apparent that the Boise high school is attracting and holding an unusually large per cent of the total school population. The conclusion is therefore justified that the articulation between the elementary schools and the high school is very satisfactory.

A still better situation with respect to articulation would be brought about by the bringing together of all the 7th, 8th, and 9th grades of the city into one building, under a distinctively "Intermediate School" or "Junior High School" organization. This would make possible the introduction of adequate "prevocational" work, as well as the beginning of modern languages, from one to two years earlier in the



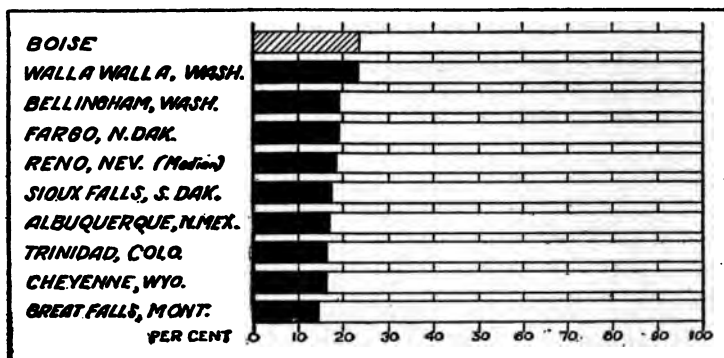


FIG. 36. SHOWING RELATION OF ENROLLMENT IN HIGH SCHOOLS TO TOTAL SCHOOL ENROLLMENT IN 10 WESTERN CITIES

pupil's course of study. There may be reasons why this separate housing of the "Intermediate School" cannot be put into execution at the present time, but it is an item that should be included in the plan for future development of the Boise school system, perhaps to be worked out with the completion of the building now in process of erection.

#### BUILDING AND EQUIPMENT

A full discussion of the high school building and its equipment will be found in the chapter on "Building and Equipment," but there are two points in particular to which attention can be called in this chapter. The laboratory for elementary agriculture is poorly equipped and entirely too small to accommodate the pupils registered in those courses. The gymnasium, both as to floor space and apparatus, is not up to the standard for a high school of 1000 pupils. It may be necessary to wait for adequate gymnasium facilities until the central portion connecting the two new wings of the present building is erected, but proper provision should be made as soon as possible for laboratory and recitation rooms for the elementary courses in agriculture.

**THE HIGH SCHOOL FACULTY**

Details as to training, tenure, salaries, etc., of the high school teachers have been discussed in the foregoing chapter on "Teaching Staff." As to teaching technique and methods, it is not possible to give in this report a detailed account covering each individual instructor. The classrooms of most of the members of the high school teaching staff were visited by members of the survey commission. All grades of teaching ability were found, but taken as a whole the teaching staff of the Boise high school was found to be well up to the standards set for high schools of from 800 to 1200 pupils. Unfortunately for the high school, four of the very best teachers found by the surveyors will not be with the school another year. Two were planning graduate work at universities, and two were taken from the high school by business corporations which appreciated their ability sufficiently to pay them adequate salaries for their services. The loss of these four experienced teachers cannot help lowering the efficiency and morale of the high school for some time to come.<sup>1</sup> The regrettable part of the matter is that two of them could have been retained if they had been assured of reasonable increases in salary early in the spring.

**CURRICULUM FEATURES**

In the organization and administration of its curriculum the Boise high school enjoys the advantage of being free from outside dictation or domination. The fact that the district is absolutely independent makes it possible for the Board of Directors to authorize any course of study that may be submitted by its administrative officers, without having to take into account state or county educational requirements. This means that if the curriculum adopted does not meet the needs of Boise and vicinity, the responsibility rests upon the board and its educational advisers. It also means that any adjustments necessary to be made in order

<sup>1</sup> See Figure 8, with accompanying comments on this subject.

to bring the courses of study up to the best standards for secondary education in a progressive American community can be made by authority of the Board of Education directly, without awaiting the approval of outside agencies.

It will be the purpose of the following discussion of the curriculum of the Boise high school to indicate to what extent the curriculum as at present constituted meets the needs of Boise and conforms to accepted standards of curriculum making for secondary schools in American cities, as well as to make constructive suggestions for the improvement of any defects that may be apparent.

### *1. The Working Out of the Curriculum*

The "Statement of Courses" which has recently been recommended to the board for publication was worked out by the teaching staff of the high school as a coöperative enterprise. All the instructors in a given department were constituted members of a committee to agree upon the type of the courses that should be offered and to formulate a statement of the aims, content, and method of presenting the courses. The high school principal was an ex-officio member of each committee. Whenever a committee had arrived at an agreement, report was made to the entire teaching staff at the regular teachers' meetings. Thus, not only did each departmental group face directly the problem involved in curriculum building, but all groups were required to square their final reports with the general aim and purpose of the course of study as a whole.

The "Statement of Courses" evolved under the plan just described is a social product. Every teacher who had a part in working out the details was educated into a new sense of responsibility for the successful operation of the courses of study as therein outlined. The high school principal might have worked out the course of study alone, submitting it in its finished form for the approval of the teaching staff. In such an event the resulting course of study

might more nearly have approximated the ideal, but there would have been a distinct loss to the morale and teaching efficiency of the high school instructors. The Boise high school plan of curriculum making deserves, therefore, commendation as being in line with the best tenets in school administration.

## *2. Curriculum Content*

As stated in Chapter XI, on "Educational and Vocational Guidance," the aim of the courses of study in intermediate and high schools should be to give preparation (*a*) for citizenship in a democracy; (*b*) for vocation or ability to make a worthy contribution to the world's work; (*c*) for avocation, or the socially profitable employment of leisure time.

The courses offered in the Boise high school that come under "a" (citizenship) are those in History and General Social Science. Judging from the work of classes which were visited, it is evident that full advantage of the situation of Boise as capital of the state and county seat of Ada County is not taken by the teachers. There is need for a great deal more "laboratory" work in a city which is itself the best possible type of citizenship laboratory.

Another source of citizenship training which is not being adequately cultivated is to be found in connection with the various student activities. The high school, for the time being, is the pupil's world, in which he is in the truest sense a citizen. Every phase of the school life, whether in the classroom or in extra-curricula activities, should be so organized as to develop high ideals of social and civic conduct, and also to give opportunity for participation in social and political situations requiring the application of principles learned in the classroom. The History courses are supposed to furnish a background for the understanding of present-day problems. As at present outlined too much time is given to Ancient and Mediæval History, and no place is provided for elementary Economics. The introduction of

two courses in Economics, even at the expense of all the time now given to Ancient and Mediæval History, would give a better-balanced course in the Social Sciences.

The courses offered that would naturally come under "b" (vocational) are: Agriculture, Manual Training, Mechanical Drawing, Home Economics, and the Commercial subjects. Of these the course in Agriculture is distinctly vocational, coming under the Smith-Hughes Act. The high school owns a 40-acre farm, with complete equipment of buildings, stock, and farm machinery. The students are required to devote one half their time to classwork and one half to experimental work on the school farm. During the summer vacations the work of the school farm is carried on by students who are paid at the current wages for their services. The farm director and teacher of Agriculture has had excellent training, both in practical farming and scientific agriculture, and he is carrying on lines of experimentation that will be of greatest service to the farmers in the region around Boise.

There appears to be commendable coördination between the courses in Agriculture, Manual Training, and Mechanical Drawing. Plans for new buildings needed on the farm are drawn by the Mechanical Drawing department, and much of the work is performed and furniture made by the Manual Training department. Plans for a machine shop to house the work in auto-mechanics were being perfected by the advanced class in mechanical and architectural drawing when the members of the survey staff inspected this phase of the work. The Home Economics department did all of the purchasing and prepared all the food for the high school cafeteria, in addition to offering the customary courses. Wholesome, well-prepared food was thus supplied to the high school pupils at a very low cost. The head of this department made such a success of her work that a Boise department store secured her services at a good salary to manage the lunchroom of its Women's Department.

The work of the Commercial department seemed to be

carried on in an efficient way so far as the teaching of the separate subjects themselves was concerned, but there was not the coördination between the work of this department and other departments that there should be. Some use of the students in typing and shorthand was made by the superintendent of schools and the high school principal; but much more could be done to give all the pupils in the Commercial department experience in handling real accounts, keeping up office files, etc., if the bookkeeping of the Agricultural and Home Economics departments and that of certain student enterprises could be turned over to them under the supervision of the head of the department.

The fact that 63, or more than one half, of the girls who are planning to be stenographers intend to complete their training in a business college is evidence that the Commercial department is not furnishing them with a sufficiently practical type of experience to meet the demands of Boise business men. The work in auto-mechanics was well organized and carried on as efficiently as could be expected in the building used. The floor space was adequate, but the lighting and ventilation were wretched. Seeing that this is the "automobile age," no more acceptable service to the community can be performed than that undertaken in the day and evening auto-mechanics classes of the Boise high school. The Board of Education can well afford to furnish all necessary buildings and equipment.

The subjects which may be classified under "c" (avocation) are: Art, Expression, Music, and the Foreign Languages. It is true that for particularly gifted persons any one of the avocational subjects may become vocational. For the great majority of high school pupils their chief value lies in the fact that they contribute to the enlargement of one's capacity for enjoyment of leisure time. There should be opportunity for the pupils highly endowed along the lines of Art, Expression, or Music to receive sufficiently advanced courses to enable them to go on from high school to special schools for the completion of their training, but there is

greater need that all pupils who enter a high school shall receive a type of training that will develop their ability to appreciate and enjoy the masterpieces of Art, Literature, and Music.

Both of these aims can be accomplished in the Boise high school. At present the tendency seems to be to neglect the aim which would seek to cultivate in every pupil a spirit of amateur interest in and appreciation of the world's highest achievements in the line of artistic endeavor.

In addition to the subjects which may be said to bear directly upon the three principal aims of secondary education, there are those of English, Mathematics, and Science, which may be said to be basic in character. Eight courses in English, eight courses in Mathematics, and eight courses in Natural Science are offered, making it possible for a pupil to earn four units of credit in any one of these departments. Aims, content of courses, and methods of presentation in these three departments were found to be very satisfactory.

### *3. Administration of the Curriculum*

Selection of courses by pupils in the Boise high school has, for the past few years, been entirely elective. Limited only by the necessity of taking certain courses in sequence, and the meeting of prerequisite requirements before other courses could be had, pupils were free to make out their own curricula. A new policy of requiring three majors of three units each, one of which shall be English, was to be inaugurated during the school year 1919-20.

The results of the system of free election on the choice of subjects by the pupils during the five semesters beginning September, 1917, is shown in Table 44. The percentages of pupils taking the subjects, arranged according to the divisions suggested in the preceding section, are as follows: *Basic group*: English, 20.8 per cent; Mathematics, 11.0 per cent; Science, 6.6 per cent; total basic group, 38.4 per cent. *Avocational group*: Art, 2.5 per cent; Expression, 3.6

TABLE 44

SHOWING NUMBER OF PUPILS TAKING VARIOUS SUBJECTS FOR FIVE SEMESTERS  
AND THE PER CENT THAT THE NUMBER TAKING EACH SUBJECT IS OF THE  
TOTAL NUMBER OF ELECTIONS

Subjects	1917		1918		1919	Total of 5 Sem'rs.	Per Cent that Total for Each Subject Is of Grand Total
	1st Sem.	2d Sem.	1st Sem.	2d Sem.	1st Sem.		
English . . . . .	685	650	627	588	721	3271	20.8
Math. 1st yr. . . . .	166	128	153	110	187	744	4.7
Math. 2d yr. . . . .	210	204	173	179	233	999	6.3
Gen. Science . . . . .	21	0	16	0	0	37	0.2 <sup>1</sup>
Bot. and Zoöl. . . . .	139	138	96	105	117	595	3.7
Phys. and Chem. . . . .	89	74	86	71	133	453	2.7 38.4
Latin . . . . .	225	286	198	208	199	1116	7.0
German . . . . .	109	150	72	38	0	369	2.4
Fr. and Span. . . . .	102	100	152	230	346	930	6.0
Art . . . . .	65	56	76	115	78	390	2.5
Expression . . . . .	130	120	126	113	100	589	3.6
Music . . . . .	25	38	39	25	6	133	0.8 22.3
Agriculture. . . . .	114	93	74	102	62	445	2.8
Man. Train. . . . .	105	50	58	65	69	347	2.2
Mech. Dr. . . . .	49	45	48	62	93	297	1.9
Home. Econ. . . . .	258	239	246	260	243	1246	8.0
Typing . . . . .	74	62	133	141	192	602	3.8
Shorthand . . . . .	63	54	53	55	86	311	2.0
Bk. and Acct. . . . .	228	186	127	149	183	873	5.5 26.2
Gen. Soc. Sci. . . . .	0	30	76	108	135	349	2.3
History . . . . .	416	342	314	283	255	1710	10.8 13.1
Grand Total . . . . .	. .	. .	. .	. .	. .	15,806	100.0

<sup>1</sup> General Science is now taught entirely in the intermediate school.

per cent; Music, 0.8 per cent; Foreign Languages, 15.4 per cent; total avocational group, 22.3. *Vocational group*: Agriculture, 2.8 per cent; Manual Training, 2.2 per cent; Mechanical Drawing, 1.9 per cent; Home Economics, 8.0 per cent; Commercial subjects, 11.3 per cent; Total vocational



group, 26.2 per cent. *Citizenship group*: General Social Science, 2.3 per cent; History, 10.8 per cent; total citizenship group, 13.1 per cent.

The plan of major groups should be so directed as to bring about an equalization of the percentages of pupils found taking courses in the four main divisions. Many who are now taking Mathematics should be encouraged to take courses in Science instead. In the Avocational group, foreign languages claim a disproportionate percentage of the pupils. It is doubtful whether one in ten of those who take a foreign language in our high schools ever acquires a sufficient mastery of it to serve either as a vocational asset or as a means of enjoying the literature for which that language is the medium of expression. Considering the doubtful value of foreign language study for the great majority of high school pupils and the immediate returns that may be had through the proper development of various lines of artistic expression and appreciation, a consistent effort should be made to attract more pupils to the Art, Music, and Expression courses.

In the Vocational group there is a great contrast between the percentage of pupils who have elected the Commercial subjects and those who have elected Agriculture. Four times as many have taken up Commercial work as have been enrolled in Agriculture, notwithstanding the fact that the Boise high school has one of the very best courses in Agriculture offered by any high school in the West. As shown in the chapter on "Educational and Vocational Guidance," Agriculture will absorb 32.0 per cent of the gainful workers, while clerical occupations will demand the services of only 4.6 per cent. The world needs scientifically trained farmers. The Boise high school has the equipment for training many more than are now taking the courses. The conclusion is obvious. Means should be devised for directing more boys and girls into this important field.

In connection with the Citizenship courses it is desirable that more attention should be paid to the study of Elemen-

tary Economics. This could be done by telescoping certain History courses and making more room for the study of present-day social and political problems.

While the subject of Physical education is not mentioned in the "Statement of Courses" and statistics regarding it were not contained in the data from which Table 44 was compiled, the Boise high school does pay attention to the physical well-being of its pupils. Military training is provided under the direction of an army officer detailed by the War Department for that service, and a physical director has charge of the gymnasium classes and athletic games. Physical examinations are made the basis of work in corrective gymnastics, and a system of simple tests has been employed to discover those who need particular attention. The aim of the director is to secure the participation of every pupil in some form of healthful physical activity, but he is handicapped by the lack of gymnasium facilities.

#### CERTAIN PHASES OF THE INTERNAL ADMINISTRATION

##### *1. The High School Principal*

The principal of the Boise high school is given practically a free hand in the management of the internal affairs of the high school. This is as it should be. The high school principal should be an expert in secondary education, with the training, personality, and executive ability to handle the problems of his office, and should then be held responsible for results. It ought to be possible for the principal so to organize his time as to give a certain amount of attention to the supervision of instruction and to the coordinating of the work of the different departments in order that each may make its proper contribution to the announced aim of the whole school. The members of the survey staff are of the opinion that the high school principal is too much burdened with petty details of office accounting. As one illustration his office was keeping all the accounts of the cafeteria, and in the absence of competent help the principal

himself was doing the bookkeeping and checking over. This work should be turned over to the bookkeeping section of the Commercial department, and other student help should be furnished to care for registration and daily routine accounting under the management of a competent principal's secretary. The Board of Education cannot afford to pay a principal's salary for a bookkeeper's services. A high school with from 800 to 1000 pupils in attendance needs all of a principal's time and attention and ought to have it applied where it will result in the establishment and maintenance of the highest standards of excellence in all departments of high school work.

## *2. Scholarship and Grading*

In giving marks indicative of scholastic attainment, the teachers of the Boise high school are expected to plot the curve of marks given by them at the end of each six weeks of school work and also at the end of each semester. If there is any great variation in the curve representing the marks which a given teacher may award and the normal curve of distribution for the entire school, the teacher must see the principal and justify his deviation from the "norm." Table 45 shows the results of this plan on the distribution of marks given during five semesters, covering the school years 1917-18, 1918-19, and the first semester, 1919.

A glance at the percentage of marks of each degree given for each subject will show that the adoption of this plan has resulted in a relatively uniform distribution of marks in each subject, so that a "1+," a "1," a "2," etc., means approximately the same thing in each department and to each teacher. The relatively small per cents (3.4 and 3.3) found in the "conditioned" and "failed" columns of Table 45 are accounted for by the 9.0 per cent in the "dropped" column. That 1407 pupils should have been permitted to drop courses during 2½ years indicates that proper care and guidance were not exercised in admitting pupils to courses.

TABLE 45

SHOWING PERCENTAGE OF MARKS OF EACH DEGREE GIVEN IN ALL SUBJECTS  
IN BOISE HIGH SCHOOL FROM SEPTEMBER, 1917, TO FEBRUARY, 1919

Subject	Marks								Tot.
	1+	1	2	3	4	Cond.	5	Dropped	
English . .	3.3	14.0	28.6	28.4	11.4	1.9	2.9	9.5	100.0
Soc. Sci. . .	1.3	12.0	23.0	30.3	12.0	1.2	7.0	13.2	"
History . .	3.0	15.0	26.0	29.7	10.8	5.0	2.0	8.5	"
Math. Adv.	2.4	16.5	27.1	25.1	13.7	1.9	5.5	7.8	"
Math. 1 yr.	2.8	16.4	25.8	25.2	2.4	1.4	3.0	12.0	"
Gen. Sci. .	2.7	27.0	19.3	32.5	5.0	0.0	13.5	0.0	"
Phys. and									
Ch. . . .	2.1	17.3	30.3	29.2	7.0	4.8	1.5	7.8	"
Biology . .	1.6	12.3	27.0	32.0	18.0	1.5	2.1	5.5	"
Latin . . .	6.5	13.1	25.5	26.8	12.4	4.1	5.6	6.0	"
German . .	6.0	18.3	27.4	21.2	7.4	2.2	4.2	13.3	"
Fr. and									
Span. . .	6.5	17.8	25.0	21.3	9.8	3.1	5.5	11.0	"
Agriculture.	2.3	12.0	34.5	24.4	12.0	0.9	5.0	9.0	"
Man. Tr. .	2.0	14.2	24.0	28.0	4.0	2.8	5.0	10.0	"
Mech. Dr. .	3.2	14.0	22.0	25.5	12.0	4.8	3.5	15.0	"
Home Econ.	2.7	18.3	28.7	28.5	11.0	2.3	1.2	7.3	"
Typing . .	5.0	22.0	18.5	20.5	13.5	7.0	3.5	10.0	"
Shorthand .	2.0	17.0	25.5	26.5	14.0	3.0	4.0	8.0	"
Bookkeep'g.	1.2	13.2	25.0	23.0	9.5	13.0	6.5	8.6	"
Art . . . .	0.9	15.0	28.0	36.0	8.0	5.1	1.0	6.0	"
Express'n .	1.1	14.0	33.5	30.0	6.4	6.5	1.0	7.5	"
Music . .	3.3	15.0	33.0	30.3	10.4	3.3	4.0	0.7	"
Per Cent of									
Total . .	3.1	15.7	27.0	27.2	11.3	3.4	3.3	9.0	100%
No. Cases .	488	2473	4268	4300	1780	556	534	1407	

Total number of cases receiving marks or being dropped from class, 15,806

Simple preliminary tests should be devised to assist teachers in selecting the pupils who will be very likely to fail if permitted to undertake their courses in order that they may be directed into courses where they will stand a chance to succeed. If carefully safeguarded against becoming mechanical, the marking system of the Boise high school can be commended as a distinct advance over the ordinary "hit or miss" plan in vogue in the average high school.

### *3. Supervised Study*

The time schedule of the Boise high school calls for five periods of one hour each, three in the morning and two in the afternoon. The afternoon session does not begin until 1.55, which gives opportunity for certain phases of the physical education program to be carried out between 1.15 and 1.55 o'clock. There is a 5-minute intermission between class periods, but this is so arranged as to leave a full 60 minutes for each class exercise. This 60 minutes is supposed to be divided into a recitation period of 30 minutes and a supervised study period of 30 minutes. There is no warning signal to indicate that the 30 minutes for recitation has expired. The teachers are left to determine for themselves the amount of time to be given each day to supervised study.

The result of this arrangement is that in most cases the entire 60 minutes is taken up with recitation and discussion and no time is left for supervised study. If the supervised study period is to be retained, there should be some means of providing for the carrying out of a more satisfactory division of time between recitation and study period.

### *4. The Advisory System*

Thirty-three of the thirty-four classroom teachers in the Boise high school act as "advisers" to groups of pupils varying in size from 16 to 34. The pupils belonging to a given "advisory" assemble in the room of their adviser 20 minutes

before the time for the first regular period in the morning and 20 minutes before the first period in the afternoon. During this time the roll is taken, special announcements for the day are made, and the remainder of the time is supposed to be occupied by the adviser in giving special counsel and help to the pupils of his group, particularly those who are reported as doing poor work in their classes. The adviser keeps not only the attendance record but the scholarship record as well. The first reports of scholarship deficiencies are made to the adviser, who confers with the pupil and the classroom teacher with a view to aiding the pupil in making up his work. No teacher is permitted to give a pupil a failing mark in a course, unless he has previously notified the pupil's adviser of the character of the work being done. This notice must be given in time to enable the adviser to be of real service to the pupil in overcoming his difficulty.

The idea behind the advisory system is a very good one, and a great many of the teachers are utilizing the two 20-minute periods per day to good advantage; but there are a number of the teachers who permit extreme disorder to reign as soon as the roll is taken and the announcements made. It is a serious question whether it would not be better to devote 5 minutes to roll taking and announcements, morning and afternoon, and either add 5 minutes to each period, making them 65 minutes long, so that 40 minutes could be devoted to recitation and 25 minutes to making a start on the preparation of the next day's lesson under the supervision of the teacher, or shorten the school day 30 minutes. The advisory system could also be utilized to advantage in connection with a systematic organization of the work in educational and vocational guidance. As administered in 1918-19, it did not justify the 40 minutes allotted to it.

#### THE NEED FOR A JUNIOR COLLEGE IN BOISE

The establishment of a junior college would give Boise a more completely articulated educational system. The argu-

ments in favor of adding two years of college work to the present four-year high school course are, briefly stated, as follows:

1. The young people of Boise are under the necessity of traveling great distances when going to institutions of higher learning. The nearest college of standard grade is located at Walla Walla, 315 miles north and west. In order to reach the University of Idaho it is necessary to pass through parts of Oregon and Washington and to make a 465-mile journey. The University of Montana is 648 miles north, while the University of Washington is 676 miles northwest and the University of Oregon is 492 miles west.

2. An institution of collegiate rank in or near a community tends to influence many young people to continue their education beyond the high school, who otherwise would not do so. This idea is supported by the data presented in Table 46.

TABLE 46

SHOWING PERCENTAGE OF HIGH SCHOOL PUPILS GOING ON TO COLLEGE  
FROM BOISE, EVERETT, PALO ALTO, AND WALLA WALLA

Year	Cities			
	Boise	Everett	Walla Walla	Palo Alto
1914. . . . .	19.0	30.0	47.0	69.3
1915. . . . .	25.2	59.8	61.2	60.4
1916. . . . .	25.5	44.2	66.0	75.9
1917. . . . .	21.0	22.0	67.6	61.0
1918. . . . .	22.3	26.9	63.2	72.5
Average Per Cent	22.7	36.6	62.7	66.0

Everett has one year of junior college work. The percentage of Everett high school pupils who continue their

education is 36.6, and of this group one half remain for the one year of work offered in the home high school. The Palo Alto high school sends 66.0 per cent of its graduates on to college. Stanford University is located within one mile of the Palo Alto union high school.

The most telling comparison with the Boise high school, however, is that of the Walla Walla high school. Walla Walla has about the same population as Boise, and has very much the same natural surroundings. The two high schools are of nearly the same size and graduate about the same number of pupils each year. From Boise 23 and from Walla Walla 63 out of every 100 high school graduates go on to college. The fact that Whitman College is located in Walla Walla undoubtedly accounts for most of this very striking difference.

A junior college in Boise would doubtless mean that 45 out of every 100 graduates of the high school would continue their education, and that at least one half of them would remain in the local school for one or two years of work.

3. Educationally considered, the junior college is advisable because it serves to complete the cycle of secondary education. It is estimated that from 40 to 60 per cent of the subjects pursued during the first two years in American colleges and universities is of secondary grade. These subjects are frequently taught by instructors whose training is not the equal of the best high school teachers. The sections are too large to permit individual instruction. In the junior colleges the classes are relatively small, individual instruction is possible, and better results may be secured.

A two years' extension of the present high school course of study would make it possible to offer additional courses in Agriculture, Commerce, and Social Science that would function more completely in the economic, social, and civic life of the community. The graduates of the junior college who went up to the universities would be ready to enter the professional and advanced courses, where they would come



at once into contact with the strongest men on the university staff.

4. It is socially and morally desirable for adolescents to remain under home guidance and supervision as long as possible. In a great university enrolling 10,000 students, approximately 6500 of them will be in the freshman and sophomore years. Adequate supervision of such a group in a large city is practically impossible. The result usually is that there is a very heavy percentage of elimination at the end of the freshman year, due to failure in college work. If the first two years of college life were spent in junior colleges, those who went on to the universities would be more mature, more settled as to life purposes, and more capable of meeting university standards of conduct and scholarship.

5. Not only would a junior college promote the social, moral, and educational welfare of Boise's young men and women, but it would be a distinct economic asset to the city as well. Graduates of neighboring high schools would be attracted to Boise for one or two years of college work, and many of those who now leave Boise to attend college would remain at home until the courses offered in the Boise junior college had been completed. The money spent in support of these young people would aggregate a goodly sum that would find its way every year into Boise business channels. The reputation of the city as an educational center would be enhanced and many families would thereby be influenced to make Boise their home.

6. The cost of establishing a junior college would not be prohibitive. The present high school facilities, with appropriate additions to library and scientific laboratory equipment, would meet the needs of the junior college. By making the selection of future high school instructors with the work of the junior college in mind, men and women could be secured with the requisite training to give the college courses in an acceptable manner. To introduce the first year of the junior college course would probably not require more than three teachers in addition to the present high school staff.

It has been found in California, where the junior college movement has attained its highest development, that the cost per pupil of junior college work is from \$125 to \$250 per year. Accredited junior colleges are affiliated with the University of California, and their graduates receive junior standing at that institution and at Leland Stanford Junior University. A plan of affiliation between the Boise junior college and the University of Idaho could undoubtedly be worked out to the advantage of all concerned.

#### SUMMARY AND RECOMMENDATIONS

1. The articulation between the Boise high school and the elementary schools of the city is very satisfactory, as shown by the percentage of 8th grade graduates going on to the high school, and also by the relationship between the total average enrollment in the high school and the total average enrollment in all schools. This articulation could be improved by a distinct junior high school organization housed in a building by itself.

2. Gymnasium equipment and elementary agricultural laboratory equipment are inadequate.

3. The loss of several most competent teachers might have been prevented by judicious salary increases.

4. The working out of the "Statement of Courses" was found to have been a social enterprise in which the entire teaching staff was enlisted. The result is a well-balanced modern course of study designed to carry out the fundamental aims of American secondary education. Certain suggestions for administering the course of study were made in the light of the percentage of pupils electing various high school subjects during the preceding five semesters.

5. As to internal administration:

- (a) The high school principal should be given sufficient clerical assistance to enable him to devote more time to supervision of teaching and carrying out the larger educational policies of the high school.

- (b) The plan of standardized values in grading for quality of work is commended, but attention is called to the unusual number of students who are permitted to drop courses. More carefully organized educational guidance would tend to eliminate this defect.
- (c) Supervised study is not administered to the best advantage. Teachers disregard study periods. Warning signals are needed, as well as closer supervision by principal of teachers' methods of utilizing study periods.
- (d) The advisory system is not functioning as it might. Too much time is now wasted. This could be made an effective means of carrying out a systematic plan of educational and vocational guidance.

6. The establishment of a junior college would round out Boise's educational system, afford opportunity for many more young people to have collegiate advantages, and be a social, economic, and educational asset to the city.

## CHAPTER XI

### EDUCATIONAL AND VOCATIONAL GUIDANCE

(Proctor)

#### THE NEED FOR EDUCATIONAL AND VOCATIONAL GUIDANCE IN BOISE

**I**T should be the purpose of the public schools of any community to prepare the boys and girls of that community for the places they are to occupy as men and women. In general that preparation should be threefold; i.e., for participation in the duties of citizenship, for earning a livelihood, and for the proper use of leisure time.

There is evidence that the Boise schools are endeavoring to perform the second of these functions, — preparation for earning a livelihood. Courses are offered in agriculture, wood-working, auto-mechanics, mechanical drawing, etc., in addition to the courses that lead to college entrance and preparation for a professional career. But there is no indication that anything is being done to guide the boys and girls of the Boise schools in the selection of their respective vocations. There are no "Life-career" classes in which information is given regarding the vocational opportunities of Boise and vicinity, nor is there any systematic effort made to discover and record the vocational capabilities and interests of the pupils as a first step in advising them regarding the occupation in which they would be most likely to succeed. There can be no doubt that the lack of systematic educational and vocational guidance results in serious misapplication of effort in school work, as well as in many misfits in vocations.

#### *1. Occupational Opportunities, Occupations of Fathers, and Occupational Ambitions of Children*

The relation between the occupational opportunities of Boise and vicinity, as shown by the 13th United States

Census, and the occupations of the fathers of Boise school children and the vocational ambitions expressed by Boise high school pupils, is brought out in Tables 47, 48, and 49. These data are supplemented by other information obtained from the pupils regarding their reasons for choosing the occupation mentioned, their courses of study and their educational plans after completing high school. The high school pupils who filled out the questionnaire relating to vocational matters numbered 749. The vocational ambitions of the grade pupils were not ascertained, but at the time of giving the spelling test one of the items of information obtained was in regard to the occupation of the father or breadwinner of the family. There were 1705 grade children, from the 3d to the 8th grade inclusive, who took the spelling test. Thus there were 2454 Boise school children who gave information regarding the occupational status of the homes from which they come.

The occupational designations used in the following tables are those found in the report of the Thirteenth United States Census (1910), Vol. IV, page 40. Table 47 shows the occupational distribution of the homes from which the children from the 3d to 12th grades, inclusive, come. For the purposes of this survey, the Census designations "Trade" and "Clerical" are combined under the heading "Commercial."

Since the occupation of the father or bread-winner is a reasonably accurate index of the social status of the home from which the child comes, high school and grade pupils have been separated in this table in order to see whether there is any marked difference in the social status of the homes from which grade and high school pupils come. This contrast will appear in a more marked degree in Table 48, where the occupations of the fathers have been assigned to ranks based on preparation and ability necessary for success.

The data set forth in Table 47 show clearly the occupational trends in Boise. It is true that not all the people of Boise have children in the public schools, but those who do

TABLE 47

GIVING THE DISTRIBUTION OF THE PUPILS OF THE BOISE SCHOOLS FROM THE 3D TO THE 12TH GRADES, INCLUSIVE, ACCORDING TO OCCUPATION OF FATHER OR BREAD-WINNER

Occupations, General Divisions	Numbers		Total	Per Cents		Total
	Grade Pupils	High School Pupils		Grade Pupils	High School Pupils	
Agriculture . . .	233	188	421	13.66	25.20	17.20
Commercial . . .	396	183	579	23.33	24.40	23.60
Mfg. and Mechan- ical . . . . .	511	177	688	29.65	23.30	28.00
Transportation . .	69	24	93	4.13	3.30	3.90
Public Service . .	83	31	114	4.85	4.20	4.50
Professional . . .	163	85	248	9.56	11.40	10.10
Extraction of Min- erals. . . . .	28	8	36	1.74	1.10	1.50
Domestic Service .	25	2	27	1.55	.30	1.10
Common Labor . .	117	6	123	6.78	.80	5.00
Retired, Father Dead, or No Oc- cupation Given .	80	45	125	4.75	6.00	5.10
Totals . . . . .	1705	749	2454	100.00	100.00	100.00

are thoroughly representative of the general population. Agriculture, Commercial, Manufacturing, and Mechanical and Professional occupations absorb 78.9 per cent of the fathers of the Boise school children, 5.0 per cent are engaged in common labor, 5.10 per cent of the children come from homes where the father is dead or no occupation was given, which leaves only 11.0 per cent engaged in extraction of minerals, transportation, public service, and domestic service.

TABLE 48

COMPARING THE PERCENTAGE OF PEOPLE ENGAGED IN THE VARIOUS OCCUPATIONAL DIVISIONS, IN THE UNITED STATES AS A WHOLE, IN THE PACIFIC AND MOUNTAIN DIVISIONS, AND IN BOISE, AS SHOWN BY OCCUPATIONS OF FATHERS OF SCHOOL PUPILS

Occupations, General Divisions	Per Cents Engaged by Districts			
	United States	Pacific Division	Mountain Division	Boise
Agriculture . . . . .	33.2	22.6	32.4	17.20
Extraction of Minerals. . . .	2.5	2.4	9.4	1.50
Mfg. and Mechanical . . . .	27.9	27.2	19.5	28.00
Transportation . . . . .	6.9	10.3	10.3	3.90
Commercial . . . . .	14.1	18.1	12.3	23.60
Public Service . . . . .	1.2	2.0	1.7	4.50
Professional . . . . .	4.4	6.0	5.2	10.10
Domestic Service . . . . .	9.9	11.3	9.1	1.10

How Boise compares in the occupational distribution of its citizens with the rest of the United States, with the Pacific Coast States and the Mountain States, is set forth in Table 48. Boise appears to have a larger proportion of its gainful workers in Manufacturing and Mechanical, Commercial, Professional, and Public Service occupations than either the Pacific Division, the Mountain Division, or the United States as a whole. On the other hand it has fewer representatives engaged in extraction of minerals, transportation, domestic service, or agriculture than the other sections mentioned.

The relatively high percentage of children coming from homes where the father is engaged in agriculture is explainable on the ground that Boise is the center of an extensive agricultural region. Professional workers and those engaged in public service are more numerous in Boise than in the average community because it is the state capital of Idaho and the county seat of Ada County.

TABLE 49

COMPARING OCCUPATIONAL CHOICES OF 749 BOISE HIGH SCHOOL PUPILS, DISTRIBUTED UNDER THE DESIGNATIONS EMPLOYED IN THE 13TH UNITED STATES CENSUS (1910), WITH THE OCCUPATIONS OF THE FATHERS OR BREAD-WINNERS IN THE HOMES FROM WHICH THE PUPILS COME

Occupational Designations	Occupational Choices of High School Pupils						Occupations Engaged in by Fathers	
	Numbers			Per Cent			Number	Per Cent
	Boys	Girls	Total	Boys	Girls	Total		
Agriculture . . . . .	52	0	52	17.0	0.0	6.7	188	25.2
Extraction of Minerals . . . . .	0	0	0	0.0	0.0	0.0	8	1.1
Mfg. and Mechanical . . . . .	31	8	39	10.3	2.0	5.0	177	23.3
Transportation . . . . .	2	0	2	0.7	0.0	0.3	24	3.3
Public Service . . . . .	6	0	6	2.0	0.0	0.8	31	4.2
Commercial . . . . .	36	143	179	12.0	32.5	23.6	183	24.4
Professional . . . . .	125	234	359	41.3	51.5	48.8	85	11.4
Domestic Service <sup>1</sup> . . . . .	0	10	10	0.0	2.5	1.3	2	0.3
Common Labor . . . . .	0	0	0	0.0	0.0	0.0	6	0.8
No Choice, or no Occupation Given . . . . .	51	51	102	16.7	11.5	13.5	45	6.0
Totals . . . . .	303	446	749	100.0	100.0	100.0	749	100.0

<sup>1</sup> The ten girls coming under this designation expressed an ambition to become "home-makers" or "housewives." Strictly speaking, they do not belong to the "Domestic Service" class of gainful workers, but there was no other designation under which their choices could be indicated.

## 2. Contrast between Occupations of Fathers and the Occupational Ambitions of Their Children

Table 49 makes a comparison between the occupations of the fathers of the Boise high school pupils and the vocational ambitions of the pupils themselves. Approximately



25 per cent of the fathers are engaged in agriculture; only 7 per cent of the pupils plan to engage in that vocation; 23 per cent of the fathers make a living in manufacturing and mechanical pursuits; only 5 per cent of the boys and girls are ambitious along those lines. When we come to the Commercial subdivision, which includes "trade" and "clerical" occupations, we find that there are 24 per cent of the fathers and 24 per cent of the pupils classified under that head. It should be noted, however, that most of the fathers are engaged in "trade," while most of the pupils, especially the girls, are ambitious to occupy clerical positions as stenographers, bookkeepers, etc.

The most pronounced contrast between occupations of fathers and ambitions of pupils is found under the designation "Professional." Here we find that while only 11 per cent of the fathers are engaged in professional callings, there are 49 per cent of the boys and girls who would like to enter some profession. Of the 125 boys who mentioned some profession, 8 wanted to be chemists; 24, lawyers; 26, doctors; 57, engineers; and only 3, teachers; none wanted to be preachers. There were 7 miscellaneous. Of the 234 girls who mentioned a professional career, 8 wanted to be artists; 8, musicians; 3, actresses; 3, missionaries; 4, librarians; 24, trained nurses; and 175, teachers; miscellaneous, 9. These two groups — 125 boys and 234 girls — comprised 49 per cent of the 749 high school pupils who expressed a vocational preference.

### 3. *Social and Economic Status a Factor in High School Attendance*

Table 49, middle section, showing per cents of fathers of grade and high school pupils coming under each rank, shows that the high school recruits its pupils more from the upper three ranks, I, II, and III, than does the grade school. It appears that 81.78 per cent of the high school pupils come from homes where the rank of the father's occupation is

I, II, or III, and only 11.6 of the high school pupils come from homes where the father's occupation ranks IV or V. In the case of the grade children, there are 68.8 per cent who come from homes where the father's occupation ranks I, II, or III, and 26.6 per cent, or over twice as many in proportion, who come from homes where the father's occupation ranks IV or V.

These facts, combined with the fact, as shown in Table 47, that while 117 fathers of grade pupils, or 6.78 per cent, are engaged in common labor, only 6 fathers of high school pupils, or 0.8 per cent, are engaged in common labor, make it clear that the high school population is rather highly selected socially and economically. The unavoidable inference is that a great many children from the homes where the father is engaged in semi-skilled or unskilled labor, which are represented in Table 50 by ranks IV and V, are under the economic necessity of leaving school and going to work as soon as they have completed the eight grades of the grammar school. Failing to arrive at this goal, they drop out and go to work as soon as they have reached the legal age, which for the state of Idaho is 18 years.

Statistical studies by Thorndike and Strayer show that from 40 to 60 per cent of the pupils who enter the grade schools never enter high school at all. That by far the greater proportion of those who drop out are the children from the homes where the occupational status of the father is that of semi-skilled or unskilled labor is indicated by Tables 49 and 50. The same fact is indicated by a similar study of 1479 California high school pupils. From this study it appeared that only 10.3 per cent came from homes where the father's occupation ranked IV, and 2.6 per cent where the father's occupation ranked V. Over 80 per cent of the high school pupils in the nine California high schools included in the study came from homes where the father's occupation ranked I, II, or III.

These facts tend to prove that the greatest amount of elimination from our public schools is found among pupils who

come from homes where there is the least chance that they will receive adequate educational and vocational guidance. There is much evidence to support the contention that most of this elimination would be prevented if our public schools gave the attention they should to scientific guidance in the matter of school work and possible life-careers.

As further evidence of the need of guidance in the matter of the selection of a vocation, reference is had again to Tables 48 and 49. Table 48 gives the percentages of people engaged in the main occupational subdivisions in the United States, in the Pacific and in the Mountain States, and also in Boise. Table 49 shows the occupational ambitions of the Boise high school pupils and the distribution of the occupations of the fathers. Almost one half (49.0 per cent) of the high school pupils plan to enter a profession, whereas only about one tenth (11.4 per cent) of the fathers of the high school pupils in Boise and only 5.2 per cent of the gainful workers of the Mountain States are engaged in professional pursuits.

Again, only 6.7 per cent of the Boise high school pupils plan a career along agricultural lines, while 25.2 per cent of the fathers of Boise high school pupils are engaged in agriculture, and 32.4 per cent of the gainful workers in the Mountain division are engaged in agricultural occupations. The same discrepancy is found in the case of manufacturing and mechanical pursuits. There are 23.3 per cent of the Boise fathers of high school pupils engaged in the last-mentioned occupations, but only 5 per cent of the high school pupils have vocational ambitions in that direction.

The only point where there is approximate agreement between the percentage of workers engaged in a group of occupations and the occupational ambitions of the high school pupils of Boise comes under the heading "Commercial," where 23.6 per cent of the pupils' ambitions fall, and in which 24.4 per cent of the fathers of the high school pupils are engaged; but, as previously explained, most of the fathers are engaged in trade or business as owners, managers,

TABLE 50

SHOWING THE RANK OF THE OCCUPATIONS OF THE FATHERS OF BOISE HIGH SCHOOL AND GRADE PUPILS, AND ALSO THE RANK OF THE VOCATIONAL AMBITIONS OF 749 HIGH SCHOOL PUPILS, ACCORDING TO AN OCCUPATIONAL SCALE BASED ON TRAINING AND ABILITY NECESSARY FOR SUCCESS IN THE OCCUPATION

Rank of Occupation <sup>1</sup>	Numbers			Per Cents			Vocational Ambitions of High School Pupils	
	Fathers of Grade Pupils	Fathers of High School Pupils	Total	Fathers of Grade Pupils	Fathers of High School Pupils	Total	No.	Per Cent
I . . . . .	216	141	357	12.7	18.8	14.5	277	37.0
II . . . . .	383	249	632	22.5	33.4	25.8	173	23.1
III . . . . .	573	227	800	33.6	30.2	32.6	195	26.2
IV . . . . .	215	48	263	12.6	6.4	10.7	2	0.2
V . . . . .	238	39	277	14.0	5.2	11.3	0	0.0
No Occupation or Voc. Amb. Given . . . .	80	45	125	4.6	6.0	5.1	102	13.5
Totals . . . . .	1705	749	2454	100.0	100.0	100.0	749	100.0

<sup>1</sup> Rank I is made up of the professional occupations: law, medicine, the ministry, higher grade of teachers, engineers, etc.; also of high state and government officials, large property holders, owners and managers of large business and manufacturing establishments, etc.

Rank II consists of the semi-professional, higher clerical and managerial positions, grade teachers, etc.

Rank III is made up of skilled workmen, carpenters, mechanics, etc.; also of office workers, salesmen, etc.

Rank IV includes semi-skilled workmen; also street-car motormen, and conductors, policemen, letter carriers, etc.

Rank V includes unskilled miners, mill workers, factory hands, day laborers, and all classes of unskilled operatives.

or salesmen, while the bulk of the ambitions of the pupils runs to clerical positions.

#### *4. The Schools' Responsibility for Guidance*

It is reasonably certain that in the long run the occupational distribution of the pupils in the public schools of Boise will approximate the percentages of the Mountain division of states and of Boise itself. Much time will be saved, much energy conserved, and the best interests of the pupils and the state will be advanced if the pupils of the Boise schools receive such information about occupations in general and about the qualifications necessary for success in them, and such help from their teachers in estimating their abilities, as will enable them to make wise selection of their life occupation while still in school.

If in addition to wise vocational guidance the pupils in the intermediate and high schools are given careful educational guidance, — i.e., such help in planning their courses of study in the light of their vocational ambitions as will enable them to see the connection between their school tasks and their life beyond the school, — there will result a better motivation of school work, pupils will remain in school longer, and the schools will more nearly fulfill their function of preparing the boys and girls of Boise for the duties of citizenship, the responsibilities of bread-winning, and the socially profitable enjoyment of their leisure time.

### A REASONABLE PROGRAM OF EDUCATIONAL AND VOCATIONAL GUIDANCE FOR BOISE

#### *1. Part-time Counselors*

At least one member of the high school teaching staff should be qualified to organize and supervise the work in educational and vocational guidance in the high school. This teacher, preferably a vice-principal, should be relieved from at least one half his teaching work and charged with the

responsibility of carrying out a definite plan for the educational and vocational guidance of high school pupils. In the grades there should be one teacher in each building, preferably the principal, to take charge of this important feature of the school work.

*2. Uniform Blanks and Cards for Gathering Necessary Information*

Space should be provided on the regular record cards for items relative to vocational aptitudes, preferences, etc., as observed by a pupil's different teachers during his progress through the grades. There should also be notations regarding moral and physical qualities. These items, combined with the customary record of school marks, would be of invaluable aid to educational and vocational counselors. The necessity for recording these facts would give the classroom teacher a more intimate knowledge of her pupils and tend to develop her interest in the vocational future of those under her care. Thus coöperation with the official counselors would be assured.

*3. Life-career Classes*

After a vocational survey of the high school has been made, or of the pupils in the upper grades of the grammar school, those who express a preference for a given occupation can be brought together in a special class or group once a week, to make a special study of that occupation. These classes should take up and discuss personal qualities demanded of those who engage in such an occupation, preparation required, wages or income to be expected, length of working season, conditions of work, organization of the industry, opportunities for regular employment, opportunities for advancement, etc.

Beginning with the occupation in which the members of the group are most interested, the work can be extended to include many different occupations. Where it is not possible

to organize special classes, much valuable information regarding vocations can be imparted to the pupils by assigning different occupations as topics for themes in English composition and also by encouraging debates on the relative merits of occupations in which the children are interested.

The local Chamber of Commerce will be glad to coöperate in the matter of collecting information about the occupations of Boise and vicinity, the public library will no doubt be willing to develop a collection of standard books dealing with the various occupations, while business and professional men will gladly give time to talk with interested boys and girls about their own lines of work, provided specific dates are made and definite instructions as to just what is wanted of them are forthcoming.

#### 4. *Placement*

The most satisfactory vocational guidance is that which not only assists the individual in acquiring vocational information and in estimating his own qualifications in the light of the demands of different occupations upon intelligence, character, and aptitude, but also provides opportunity for vocational experimentation. The so-called vocational subjects are for the most part given under "school" conditions and for that reason do not constitute a genuine "try-out" in the occupation for which they are designed to be a preparation. It is necessary for the school authorities in charge of vocational and educational guidance, therefore, to work out some plan of part-time employment, or vacation placement in occupations akin to the life-career interests of those who are about to complete their education. This is not so vital in the case of those who expect to continue their education in colleges, universities, and other institutions beyond the high school; but for those in the grades and in the high school who must enter the competition for a livelihood without the advantage which comes from higher education, there is need for a certain amount of occupational

prospecting in order that final adjustment to the best possible occupation may be made as soon as possible after leaving school.

To this end the public schools should maintain a placement bureau, which would have available all the information concerning the vocational ambitions and physical and mental characteristics of the pupils that the teachers and vocational counselors have been able to gather. Efforts should be made by this bureau to place the boys and girls who are most likely to be compelled to leave school early in positions in line with their vocational interests and abilities for the summer vacations, or for part-time work during the school year. By keeping in touch with youth so placed, the counselors will be in a much better position to give them sound advice, and to help them in selecting the occupation which they should ultimately enter, than in any other way.

### *5. Employment of Psychological Tests*

Psychological tests were applied to the drafted personnel of the army, and the results proved to be immensely valuable in the classification of the men and their placement in the situations where they would be able to render the most effective service. Among other things it was found that there are different levels of intelligence found among those engaged in different occupations. For example, engineer officers made an average score in the psychological tests four times greater than that made by common laborers. A commission, under the auspices of the Rockefeller Foundation, is now at work adapting the tests used in the army to the needs of the public schools. Every city of the size and importance of Boise should have on the teaching or supervisory staff of its public schools a person competent to administer and interpret the results of individual and group mental tests.

A concrete example will illustrate the possible use of mental tests in educational and vocational guidance. One



of the members of the survey staff was requested to test a high school pupil with the Stanford Revision of the Binet-Simon Intelligence Scale. It was found that this pupil, who was in the 9B grade and 17 years and 2 months old, had the mentality of a child 11 years of age. She had attempted four subjects: English, Latin, General Science, and Sewing. She failed during the first semester in Latin, General Science, and Sewing, barely scoring a passing grade in English. The mental test was given near the close of the school year, and all her teachers had handed in her name as one doing work below passing grade for the second semester. The test revealed in 40 minutes what it took the high school teachers a whole year to find out; namely, that the girl did not have the mental ability to do high school work. A year of her time and of the energy of her teachers was wasted.

Mental tests, wisely employed, would put the teachers and vocational counselors in possession of knowledge of the pupil's intellectual capacity which could be utilized both in planning his course of study so that he would be able to master his school work and make progress according to his ability, and also in determining the general occupational level to which he might aspire with reasonable hope of success.

#### SUMMARY AND RECOMMENDATIONS

1. Educational and vocational guidance was found to be neglected in the Boise schools.

2. That work along these lines is much needed is shown by tables giving the distribution of occupations engaged in by the fathers of Boise grade and high school pupils; also by the distribution of gainful workers in the main occupational subdivisions in the United States at large, as well as for the Pacific and Mountain states; finally by the discrepancy shown to exist between the vocational ambitions of pupils and the percentages of workers engaged in the different lines of gainful endeavor in Boise and vicinity.

3. A reasonable program of educational and vocational guidance is recommended for the Boise public schools. Such a program would consist of (a) the appointment of part-time counselors in the high and grade schools; (b) the use of uniform blanks for recording educational and vocational data; (c) the organization of life-career classes for gathering and imparting information concerning occupations; (d) development of a system of placement to enable pupils to get part-time and vacation experience along the lines of their occupational ambitions; (e) the employment of mental tests as a means of discovering the native endowment of pupils in order that school tasks may be adapted to their ability and vocations suggested in which they will have a chance of ultimate success.

## CHAPTER XII

### COSTS AND BUSINESS MANAGEMENT

#### THE PROBLEM STATED

**T**HERE is no single aspect of a school system more difficult to judge accurately at the present time than that of costs. The conditions of war have not only modified our educational aims but they have so altered the value of money and of commodities as to make all past financial standards next to useless as a basis for judging present-day expenditures. Any comparison of present with past costs must therefore be considered in the light of these fluctuating values. We can keep in mind that most fluctuations have been upward and that figures for 1919 must for this reason alone be much higher than similar figures for five or ten years earlier.

In this report the weak points in Boise's school system have been pointed out and recommendations have been made for numerous improvements. The report calls for a larger teaching force; for more thorough supervision; for additions to curriculum; for added library and equipment; for better buildings; for greater attention to matters of health and physical development; for certain lines of reorganization; for the organization of special classes; for vocational and educational guidance; for night schools; and, finally, for the development of a junior college. While some of these changes will call for no more than a rearrangement of present expenditures, others will call for additional outlays. Is Boise financially able to assume this larger obligation, remembering that the city is growing rapidly and even with the present program must gradually enlarge her educational budget?

In Chapter I certain facts were brought out which tend to show that Boise occupies a favorable position in the mat-

ter of educational costs. The city is growing; it has promise of rapid financial development; the population is becoming more and more homogeneous; the city ranks low in number of children of school age and high in young adults; general government — police, fire, and health protection, etc. — cost relatively less in Boise than elsewhere; illiteracy, though still a problem, is on the decrease; there is no unusual pressure for the development of technical schools with expensive laboratories; and the city has been operating with a relatively low tax rate. Every one of these items gives Boise a financial advantage when it comes to providing the kind and amount of education needed by the city's children. Opposed to this favorable showing is the single fact that Boise's per capita wealth is slightly below average for cities of that class.

The following tables will form a basis for judging of the extent to which Boise is living up to her obligations in the matter of expenditures for education.

Boise's income for education is derived mainly from the state, the county, and the district and from tuition from outside pupils. During the past decade the total annual income has varied from \$200,000 to \$250,000, while the expenditures have ranged from \$180,000 to \$280,000 per year.

With this amount of money Boise is now keeping up ten school buildings and adding a new building this year, and providing training for approximately 3500 children, or roughly one fifth of the city's population.

Table No. 51 shows Boise's place among 26 cities of her own class in respect to per capita cost of education.<sup>1</sup> From this table it will be seen that Boise spends \$5.36 for each man, woman, or child in the city. The range for the 26 cities is from \$2.30 to \$8.96 per capita. This gives Boise a median position. A closer study of the table, however,

<sup>1</sup> There are 91 cities in the United States with populations of 30,000 to 50,000. These 26 cities are representative of the group, in that all states containing such cities are represented by at least one city. (Based on Financial Statistics of Cities, United States Census, 1917.)

**BOISE'S SCHOOL COSTS COMPARED WITH THOSE  
IN OTHER CITIES**

***1. Per Capita Cost of Education***

TABLE 51

**PER CAPITA COST OF EDUCATION IN 26 CITIES (FINANCIAL STATISTICS  
OF CITIES, UNITED STATES CENSUS, 1917)**

City	Per Capita Cost
1. Brookline, Mass. . . . .	\$8.96
2. Elmira, N. Y. . . . .	8.22
3. Madison, Wis. . . . .	7.94
4. Stockton, Calif. . . . .	7.94
5. Colorado Springs, Colo. . . . .	7.03
6. Stamford, Conn. . . . .	6.93
7. Orange, N. J. . . . .	6.55
8. Ogden, Utah . . . . .	6.27
9. Tulsa, Okla. . . . .	6.21
10. Everett, Wash. . . . .	6.14
11. Bellingham, Wash. . . . .	5.99
12. Niagara Falls, N. Y. . . . .	5.70
13. <b>BOISE, IDAHO . . . . .</b>	<b>5.36</b>
14. Charleston, W. Va. . . . .	5.29
15. Jackson, Mich. . . . .	5.28
16. Aurora, Ill. . . . .	5.23-
17. Easton, Pa. . . . .	4.91
18. Joplin, Mo. . . . .	4.73
19. Knoxville, Tenn. . . . .	4.37
20. Austin, Texas . . . . .	4.32
21. Zanesville, Ohio . . . . .	3.87
22. Newport, Ky. . . . .	3.04
23. Shreveport, La. . . . .	2.90
24. Columbia, S. C. . . . .	2.47
25. Wilmington, N. C. . . . .	2.31
26. Portsmouth, Va. . . . .	2.30

Average, 26 cities, 5.39

Median, 26 cities, 5.33

shows that there is not a western city that ranks lower than Boise. Among the 91 cities of this class in the United



FIG. 37. PER CAPITA COST OF EDUCATION IN WESTERN CITIES OF BOISE'S POPULATION CLASS

States there are four western cities which are not included in our table: Pasadena, San Jose, and Fresno, California, with per capita costs of \$10.06, \$7.02, and \$8.33, respectively, and Butte, Montana, with a per capita cost of \$5.30.

Boise should be compared with western cities rather than with the United States as a whole, and when so compared her position is seen by Figure 37 to argue that Boise must increase her expenditures for education if she wishes to keep pace with neighboring cities.

## 2. Cost per Person 5 to 19 Years Old Inclusive

If Boise were providing schooling for all who are legally entitled to it, that would include all children between the ages of 6 and 21 years. Figures to compute cost on this basis are not available for all cities, though by using figures from Tables 4 and 51 we can compute approximately the 1917 cost per census child.

Table 52 shows Boise's position among the 26 cities when so compared.

Owing to Boise's extremely low percentage of children 5 to 19 years old, the city holds a more favorable place in this table. The range is from \$8.27 to \$44.35. Boise spends \$24.47. The average for the 26 cities is \$21.91, and the

TABLE 52

**COST OF SCHOOLS PER PERSON 5 TO 19 YEARS OLD.<sup>1</sup> (THIS IS APPROXIMATELY THE COST PER CENSUS CHILD.) (COMPUTED FROM TABLES 4 AND 51)**

City	Cost
1. Brookline, Mass. . . . .	\$44.35
2. Stockton, Calif. . . . .	40.72
3. Elmira, N. Y. . . . .	33.82
4. Everett, Wash. . . . .	32.66
5. Madison, Wis. . . . .	31.76
6. Colorado Springs, Colo. . . . .	28.70
7. Stamford, Conn. . . . .	25.85
8. <b>BOISE, IDAHO.</b> . . . .	<b>24.47</b>
9. Orange, N. J. . . . .	23.56
10. Tulsa, Okla. . . . .	23.52
11. Billingham, Wash. . . . .	23.30
12. Niagara Falls, N. Y. . . . .	23.27
13. Jackson, Mich. . . . .	23.16
14. Ogden, Utah . . . . .	21.84
15. Aurora, Ill. . . . .	20.27
16. Easton, Pa. . . . .	19.56
17. Charleston, W. Va. . . . .	18.82
18. Joplin, Mo. . . . .	16.95
19. Zanesville, Ohio . . . . .	15.86
20. Knoxville, Tenn. . . . .	15.44
21. Austin, Texas . . . . .	14.74
22. Shreveport, La. . . . .	11.11
23. Newport, Ky. . . . .	11.01
24. Columbus, S. C. . . . .	8.55
25. Wilmington, N. C. . . . .	8.31
26. Portsmouth, Va. . . . .	8.27

Average, 26 cities, 21.91

Median, 26 cities, 22.50

median is \$22.50. This slight advantage, however, cannot be interpreted to mean that Boise is making relatively large expenditures for schools. Being fourth from lowest in point of numbers to provide for, the city should hold the fourth

<sup>1</sup> Only 3 of the 26 cities have a lower percentage of children 5 to 19 years old than has Boise. See Table 53 and the comments following.

TABLE 53

COST OF SCHOOLS PER CHILD IN AVERAGE DAILY ATTENDANCE (COMPUTED FROM STATISTICS IN THE REPORT OF THE UNITED STATES COMMISSIONER OF EDUCATION FOR 1917, VOL. II)

City	Cost
1. Brookline, Mass. . . . .	\$76
2. Stockton, Calif. . . . .	61
3. <b>BOISE, IDAHO</b> . . . . .	<b>58</b>
4. Colorado Springs, Colo. . . . .	57
5. Bellingham, Wash. . . . .	54
6. Everett, Wash. . . . .	51
7. Madison, Wis. . . . .	49
8. Aurora, Ill. . . . .	48
9. Elmira, N. Y. . . . .	48
10. Stamford, Conn. . . . .	45
11. Niagara Falls, N. Y. . . . .	40
12. Jackson, Mich. . . . .	39
13. Easton, Pa. . . . .	37
14. Tulsa, Okla. . . . .	37
15. Zanesville, Ohio . . . . .	37
16. Ogden, Utah . . . . .	35
17. Charlotte, N. C. . . . .	31
18. Knoxville, Tenn. . . . .	30
19. Newport, Ky. . . . .	30
20. Austin, Texas . . . . .	29
21. Joplin, Mo. . . . .	24
22. Shreveport, La. . . . .	22
23. Columbia, S. C. . . . .	21
24. Portsmouth, Va. . . . .	21
25. Wilmington, N. C. . . . .	No data
26. Orange, N. J. . . . .	No data
Average, 24 cities, 40	Median, 24 cities, 38

place from the top in this table, whereas it is No. 8 instead, which must be regarded as relatively low.

### 3. *Cost per Child in Average Daily Attendance*

From the standpoint of average daily attendance, Boise's position among these cities for the year 1916 was substan-



tially what it should have been. From Table 53 it will be seen that Boise holds third place in the list.

The range in expenditure per pupil in average daily attendance for these 26 cities is from \$21 to \$76. Boise spent \$58, ranking among the more progressive cities. In view of her relatively low number of school children, this really places Boise as an average city, or very slightly above the average, and not as one of the leading cities.

#### *4. Amount of Wealth behind Each Dollar Spent on Education*

Another view of Boise's position among these cities is seen in Table 54, where the cost of maintaining schools is stated in terms of the city's wealth.

From this table we see that for every dollar spent on education, Boise possesses \$160 of wealth. Columbia, S. C., has \$723 for each dollar it spends on schools, while Elmira, N. Y., has but \$102. The average for the 26 cities is \$252, and the median is \$212.

When judged by what other cities are doing, this table argues that the wealth of Boise is bearing somewhat more than an average burden for its schools. It must be remembered, however, that there are a number of wealthy eastern cities included in this table with which Boise could scarcely expect to compete. Attention also is called to the fact that in this table only one of the western cities, Stockton, ranks above Boise. Finally, by Table 8, we are again reminded that Boise's tax rate is below rather than above the average.

#### *5. Cost of Education per Capita of Young Adults*

The meaning of Table 54 is further modified when we consider Boise's expenditures in terms of her man power to produce wealth. Table 4 shows that Boise ranks high in adults 20 to 44 years old, and this must be recognized as an asset to the city. Table 55 shows that Boise spends on her schools less per young adult than is spent by the average of cities in her class.

TABLE 54

SHOWING THE AMOUNT OF REAL WEALTH BEHIND EACH DOLLAR SPENT  
FOR THE MAINTENANCE OF SCHOOLS

City	Amount
1. Columbia, S. C. . . . .	\$723
2. Shreveport, La. . . . .	548
3. Wilmington, N. C. . . . .	471
4. Brookline, Mass. . . . .	437
5. Charleston, W. Va. . . . .	343
6. Portsmouth, Va. . . . .	297
7. Stockton, Calif. . . . .	282
8. Zanesville, Ohio . . . . .	258
9. Madison, Wis. . . . .	250
10. Aurora, Ill. . . . .	233
11. Newport, Ky. . . . .	222
12. Easton, Pa. . . . .	219
13. Austin, Texas . . . . .	212
14. Knoxville, Tenn. . . . .	212
15. Niagara Falls, N. Y. . . . .	201
16. Jackson, Mich. . . . .	200
17. Joplin, Mo. . . . .	177
18. Stamford, Conn. . . . .	170
19. Tulsa, Okla. . . . .	161
20. <b>BOISE, IDAHO</b> . . . . .	<b>160</b>
21. Ogden, Utah . . . . .	159
22. Colorado Springs, Colo. . . . .	156
23. Bellingham, Wash. . . . .	135
24. Everett, Wash. . . . .	127
25. Orange, N. J. . . . .	107
26. Elmira, N. Y. . . . .	102

Average, 26 cities, 252

Median, 26 cities, 212

After careful study of the facts touching:

1. Cost per capita of entire population (Table 51),
2. Cost per person 5 to 19 years old in the city (Table 52),
3. Cost per child in average daily attendance (Table 53),

TABLE 55

AMOUNT SPENT ON EDUCATION FOR EACH PERSON IN THE CITY WHO  
IS 20 TO 44 YEARS OLD (COMPUTED FROM TABLES 4 AND 54)

City	Amount
1. Elmira, N. Y. . . . .	\$18.81
2. Stockton, Calif. . . . .	18.81
3. Brookline, Mass. . . . .	18.28
4. Madison, Wis. . . . .	16.46
5. Stamford, Conn. . . . .	16.00
6. Colorado Springs, Colo. . . . .	15.66
7. Orange, N. J. . . . .	15.37
8. Ogden, Utah . . . . .	14.80
9. Tulsa, Okla. . . . .	12.65
10. Bellingham, Wash. . . . .	12.56
11. Aurora, Ill. . . . .	12.04
12. Jackson, Mich. . . . .	11.73
13. Niagara Falls, N. Y. . . . .	11.72
14. Easton, Pa. . . . .	11.69
15. Joplin, Mo. . . . .	10.74
16. Austin, Texas . . . . .	10.61
17. <b>BOISE, IDAHO.</b> . . . .	10.61
18. Everett, Wash. . . . .	10.33
19. Knoxville, Tenn. . . . .	9.54
20. Zanesville, Ohio . . . . .	8.96
21. Charleston, W. Va. . . . .	8.54
22. Newport, Ky. . . . .	6.86
23. Shreveport, La. . . . .	6.43
24. Wilmington, N. C. . . . .	5.48
25. Columbia, S. C. . . . .	5.17
26. Portsmouth, Va. . . . .	4.94
Average, 26 cities, 11.31	
Median, 26 cities, 11.70	

4. Amount of real wealth back of each dollar spent for schools (Table 54),

5. Cost per young adult (20 to 44 years old) (Table 55),  
the writer is convinced that Boise could immediately increase her educational budget by enough to carry out the

principal recommendations of this report and still have a tax rate below that of the leading cities of the group studied. The highest tax rate (\$25.30 per \$1000) of the 26 cities is borne by Everett, Washington, the lowest (\$10.46) by Columbia, South Carolina. Boise ranks 14th in the list, with a rate of \$18.04. The difference between a rate of \$18.04 and \$25.30 for Boise is the difference between a mediocre school system on the one hand and a high-class modern system on the other. Boise should be in the lead, not only for her own sake, but because of the wide influence her leadership would exert over the whole Northwest. The taxpayer of Boise must see that to exercise such leadership will in the long run bring large returns to the city aside from the immediate value of good schools, to which the people of Boise are justly entitled.

#### HOW BOISE'S SCHOOL EXPENDITURES ARE DISTRIBUTED

##### *1. Distribution of a Decade of Boise's School Expenditures*

In Figure 3 was shown how Boise spends each dollar of her income. In Table 9 it was noted that Boise devotes a relatively large portion of that dollar to the maintenance of schools. Our question here is: Does Boise spend her school money wisely?

Table 56 shows the distribution of Boise's school expenditures for the past ten years.

There are several points of interest about these figures. The cost of general control has not increased very greatly; the cost of instruction increased rapidly for a few years and then remained stationary even through the war years; the cost of operation has about doubled, the effects of the war being evident; the increase in cost of maintenance has been steady but more rapid than that for operation; the expenditures for "outlays" (buildings and grounds) have been irregular and roughly on the decline; and the total costs have grown rather slowly. Figure 38 makes the more important of these facts and tendencies clear.

TABLE 56

SHOWING A DECADE OF THE DISTRIBUTION OF BOISE'S SCHOOL EXPENDITURES (COMPILED FROM ANNUAL REPORTS OF THE CLERK OF THE BOARD OF EDUCATION)

NOTE: Several of the lesser expenditures have been grouped differently from year to year, which would modify this table in some details.

Year	General Control	Instruction	Operation	Maintenance	Auxiliary Agencies	Miscellaneous Expenses	Outlays, Acquisitions, and Construction	Other Payments	Total
1910	7,154	82,962	15,262	2,925	238	252	57,729	12,896	179,421
1911	8,708	109,402	19,369	4,167	111	612	57,841	13,387	213,600
1912	8,651	131,245	16,301	5,958	2,189	475	41,573	18,885	225,282
1913	10,024	138,654	16,516	4,606	3,876	526	80,721	27,152	282,116
1914	8,140	145,656	16,849	5,267	1,725	205	40,590	24,007	242,443
1915	7,731	142,561	19,882	7,524	5,522	509	3,066	27,514	214,312
1916	7,483	144,408	18,002	8,587	89	50	3,101	26,273	209,540
1917	7,863	142,248	26,599	9,440	513	....	11,383	31,177	229,226
1918	9,306	144,245	30,480	18,620	1,031	1149	18,784	20,539	250,847
1919	11,002	149,028	26,663	13,100	2,406	1795	6,723	22,529	233,201

As has been shown in this report, the upward tendency of the curve representing outlays is inevitable. The real surprise of the figure is that the instruction curve does not rise noticeably after 1914. In the light of increase in population and wealth, this is not as it should be.

## *2. Division of Cost between Elementary and High Schools*

As yet, little theorizing has been done on the relative emphasis which a democracy should place upon secondary

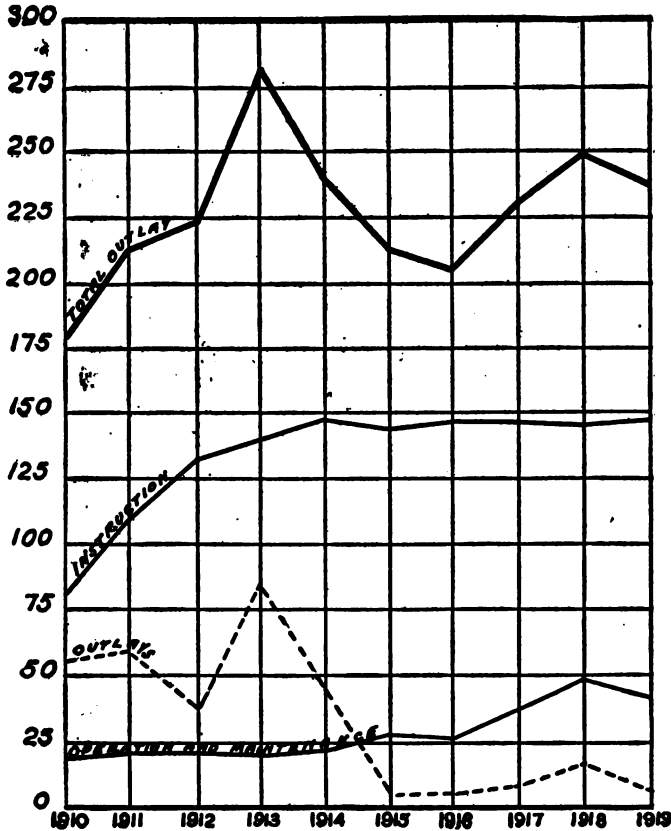


FIG. 38. A DECADE OF BOISE'S EXPENDITURES FOR SCHOOLS, TOGETHER WITH THE THREE PRINCIPAL ITEMS OF THE EDUCATION BUDGET

education. The high school has fought its way into the public school system, and now its rights to expand are rarely questioned. In fact, the high school has become so popular in some states that there is some question as to whether it is not getting the lion's share of the school money.

Figure 39 shows what per cent of total school expendi-

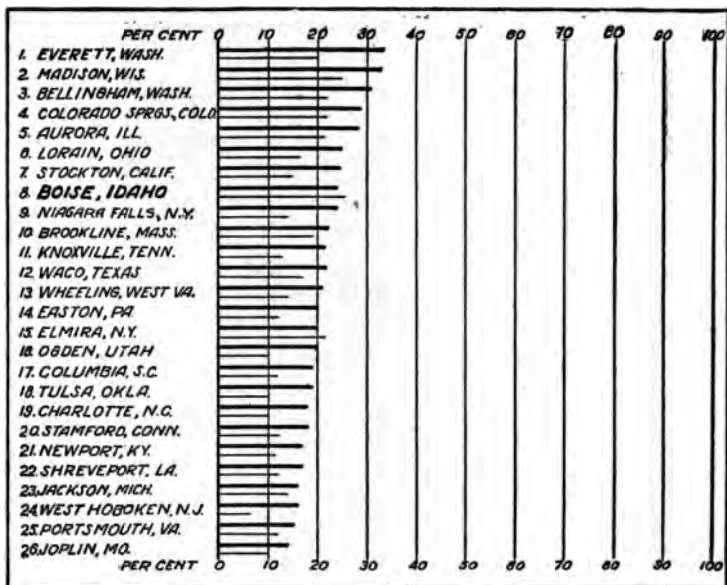


FIG. 39. SHOWING THE PER CENT OF TOTAL SCHOOL EXPENDITURES DEVOTED TO MAINTENANCE OF THE HIGH SCHOOL AS COMPARED WITH THE PER CENT OF TOTAL SCHOOL ATTENDANCE AT THE HIGH SCHOOL

Heavy line indicates expenditures; lighter line, attendance.

tures went for high schools in 26 cities in 1915-16. It also shows what per cent of the total number of pupils in average daily attendance were in attendance at high schools. Joplin, Missouri, put 14 per cent of its total school expenditures into high schools, while for Everett, Washington, the same figure was 33 per cent. Boise stands eighth from the highest, devoting 24 per cent of all school expenditures to her high school. The average for the 26 cities is 21.9 per cent, and the median is 20.5 per cent. Boise stands relatively high, therefore, in the per cent of her school money devoted to high school purposes.

An examination of the second item in the figure, however, shows that there is good reason for this wide variability in

the per cent of total cost devoted to high schools. But 6 per cent of the school population of West Hoboken, New Jersey, went to high school in 1916, while in Boise 26 per cent went to high school. In no other city of the group was the attendance at high school so large a percentage of the total average attendance for all schools as at Boise. This is a record of which Boise may justly be proud, and one which this report must present as substantial evidence of the need of a junior college for the district.

If average daily attendance is used as a basis for determining what portion of school expenditures should be devoted to high school support, then a comparison of the two bars for each city in Figure 39 is of interest. When this figure is so studied, it becomes evident that in practice there is little relation between the portion of total funds and the portion of total attendance that go to the high school. The figure representing the per cent of cost is, in every case but two, larger than that representing attendance, and those two are Elmira, New York, and Boise, in both of which cases the difference is but 2 per cent. In the other cities, the per cent of total expenditures devoted to high school is from 2 to 13 per cent higher than is the per cent of total school population which goes to high school. There is therefore but one other city in the list which devotes a relatively lower proportion of the total school budget to the high school than does Boise. Stated another way, Boise gives her elementary schools as large a portion of the school budget as is given by any city in the list, and far larger than most.

Without attempting to say just what relation there should be between attendance and cost,<sup>1</sup> as shown in Figure 39, it will be noticed that Boise occupies an extreme position among the 26 cities, and one that is favorable to the elementary schools of the city. It is the judgment of the survey staff, based upon a study of the schools, apart from costs,

<sup>1</sup> There are good reasons why high school education should cost more per pupil in average attendance than is needed for elementary schools, as salaries, laboratory equipment, etc.



that the elementary schools are at present more in need of funds than is the high school. In view of the experience of other cities, and also of the popularity of the high school, Boise would be warranted in a somewhat more liberal use of funds for high school work, though the present distribution is not to be criticized.

### *3. Per Cent of Total Expenditures Devoted to Payment for Instruction*

The extent to which a school system keeps down its overhead costs is to some extent a measure of the efficiency of the system. The lower the overhead costs, the higher will be the amount left to pay for instruction. Table 57 shows for 23 cities what part of their total school expenditures goes to pay for instruction. In this table Boise occupies seventh place.

One city devotes as low as 59 per cent of its total expenditures to the payment for instruction, while in another city this figure is 83 per cent. In Boise 74 per cent of all costs are for instruction. Since the average for all the cities in the United States of this population group is 72 per cent and the average and median for this group is 70 per cent, Boise seems to be keeping overhead costs well in hand.

## THE BUSINESS MANAGEMENT OF BOISE'S SCHOOLS

### *1. The Size of the Task*

The Board of Education in Boise now has eleven buildings to care for and operate; it must purchase supplies and equipment for the schools; it must receive, store, and distribute its supplies and equipment as needed; it must finance the project; and it must keep track of its accounts. All together this means the expenditure of a quarter of a million dollars yearly, which, from the standpoint of business, is no small enterprise.




TABLE 57

PER CENT OF TOTAL SCHOOL EXPENDITURES USED TO PAY FOR INSTRUCTION

City	Per Cent
1. Austin, Texas . . . . .	83
2. Ogden, Utah . . . . .	79
3. Portsmouth, Va. . . . .	79
4. Newport, Ky. . . . .	78
5. Knoxville, Tenn. . . . .	77
6. Niagara Falls, N. Y. . . . .	77
7. <b>BOISE, IDAHO</b> . . . . .	<b>74</b>
8. Shreveport, La. . . . .	73
9. Jackson, Mich. . . . .	71
10. Madison, Wis. . . . .	71
11. Columbia, S. C. . . . .	70
12. Stamford, Conn. . . . .	70
13. Colorado Springs, Colo. . . . .	68
14. Aurora, Ill. . . . .	67-
15. Bellingham, Wash. . . . .	67
16. Joplin, Mo. . . . .	67
17. Stockton, Calif. . . . .	66
18. Tulsa, Okla. . . . .	66
19. Everett, Wash. . . . .	65
20. Elmira, N. Y. . . . .	63
21. Brookline, Mass. . . . .	61
22. Easton, Penn. . . . .	60
23. Zanesville, Ohio . . . . .	59
24. Average for all cities in U. S. of 25,000 to 100,000 population is .	72

Average, 23 cities, 70

Median, 23 cities, 70

## 2. *How the Business is Handled*

The machinery for carrying on this business is partially shown, in Figure 6, to consist of the Board of Trustees, the board's committee on finance, a treasurer, and the clerk of the board. The clerk acts as bookkeeper and purchasing agent and has charge of storage and distribution of supplies. Purchases are made only upon requisitions signed by the

superintendent of schools, and are carefully accounted for at each stage in the process of purchase, receipt, storage, and distribution. The plans for handling all the necessary accounts are relatively new, but when fully operating as planned for by the present clerk of the board, the school system will have a thorough system of checks on all expenditures.

In this connection it is recommended that the clerk of the board be given a title that more nearly describes his actual functions, or the functions suggested by Figure 17. "Clerk of the Board and Purchasing Agent" would accomplish this end. To this office, then, should be definitely delegated the necessary authority, *not to determine what to purchase*, but to purchase, and to manage the receipt, storage, and distribution of materials. This would do away with an annoying tendency on the part of some to neglect to account for things used. In granting this added authority it should be made clear that all these duties are to be performed under the directions of the superintendent of schools. It is largely because of the harmonious relationship between the present superintendent and clerk rather than by delegated power that the clerk is able to handle the work so efficiently at present. A change in either office might alter the situation for the worse. Figure 7 presents this plan. Very shortly a bookkeeper and supply clerk will be needed in this department.

The present storage facilities are entirely inadequate and unsatisfactory. They enforce delays, they are not very secure against theft, and they are not sanitary. Many school supplies, as books and paper, should be kept free from dust.

### *3. Bookkeeping and Cost Accounting*

Boise's system of accounts conforms reasonably closely to the plan recommended by the United States Commissioner of Education, the N. E. A., and the Association of Public School Accountants. The classification of items is suffi-

ciently detailed so that there is little chance of charging an item to the wrong account or of covering up large expenditures under such titles as "Other Things," "Miscellaneous," etc. The filing system in use is simple and workable, and the books are being kept in good form. Any citizen of Boise could easily see what is being done with every single cent of the school money; he could see vouchers for every cent, and the financial condition of the schools on any day.

There is one kind of cost accounting, however, that needs expansion in Boise. That is the statement of costs in terms of some workable unit. It is necessary to know what results various kinds of service are producing under different conditions, etc., in order to locate sources of waste and economical methods of operation. One school may be using paper at a cost of several cents per child per month more than is common in other schools fully comparable. By wrong educational methods one school may be spending twice as much as another for results in spelling or arithmetic or writing which are no better. Poor teaching often costs more than good teaching, though we pay less. When schools have introduced adequate financial as well as pedagogical methods of accounting, so that we may compare cities, schools, and departments with respect to janitor service, use of supplies, time and money cost of instruction, supervision, etc., then and then only can we expect efficient service. A superintendent should be able to tell his board what it has cost per pupil to run each course offered by the schools. Doubtless this method is used more or less in informal reports, but we recommend that such a plan be worked out and made part of the permanent records in order that each year these costs may be compared with similar costs of previous years.

#### *4. Need for a Budget System*

Boise does not budget its school funds. There is every reason why a school system should keep pace with modern methods in public finance. The budget method of handling state expenditures has been adopted by proper legislative

enactment in most of our states, very recently including Idaho, and many cities use budgetary procedure in municipal and school affairs. The method is not very old, but its merits for economy and wise use of money are well understood. With a budget, costs cannot easily become one-sided. Each expenditure is carefully decided upon at a time when the needs for every other expenditure are being studied.

To budget the year's money is practically to write out in full the board's school policy. That is precisely what any other method of finance does not do. In fact, the old way of "pay debts as they come" discourages the making of a policy and so makes administration difficult. When a board has written its budget in the summer months, it has made it possible for the superintendent to work out full plans ahead of time.

When a budget is made it is assumed, even if not stated, that the superintendent is authorized without consulting the board or any committee to use the funds as budgeted. If he wishes he may have the purchasing agent buy in large lots and in advance, and so effect a saving. At present this is rarely done in Boise. The bad system of "buy it in our town" is still too carefully followed. Local merchants should not seek alms at the schoolhouse door. There are a few "little" merchants of this "pauper" variety in every city, and the taxpayer ought to deal with them *justly*.

The making of the budget should be the one large, serious, and constructive piece of work which a board of education does. The work should be done as a single task, by the entire board. It should be based on estimates made by the superintendent and his staff, together with full inventories of supplies on hand and total and unit statements of all expenditures for previous years.

With a budget system and a proper annual audit by a certified accountant, the need for a permanent finance committee disappears. The use of budgetary procedure and the doing away with the present committee on finance are strongly recommended.

**SUMMARY AND RECOMMENDATIONS**

The main questions which this chapter tries to answer are:

Does the Boise Independent School District spend as much money for the maintenance of schools as it is able to spend?

Does the district make a wise apportionment of that money to the various school needs?

Is the business management of the schools satisfactory?

In answering the first of these questions Boise's expenditures have been compared with those of a group of cities of approximately the same population as Boise and in the following particulars:

1. The per capita expenditure for all educational activities.

2. The expenditure per person 5 to 19 years old.

3. The expenditure per pupil in average daily attendance.

4. The amount of wealth back of each dollar spent for school maintenance.

5. The expenditure per young adult (ages 20 to 44).

In answering the second question, similar comparisons were made with respect to:

1. The division of expenditures between elementary and high schools.

2. The per cent of total expenditures devoted to the payment for instruction.

Boise's per capita expenditure for schools is approximately the average expenditure of the 26 cities studied.

Boise's expenditure per person 5 to 19 years old is very slightly above both the average and the median for the 26 cities.

Boise's expenditure per pupil in average daily attendance is well above the average and the median of 26 cities.

Boise possesses less wealth per dollar spent on education than either the average or median of 26 cities.

Boise's expenditure per young adult is less than either the average or the median for 26 cities.

Boise's division of expenditures between elementary and high schools is less favorable to the high school and more favorable to the elementary schools than is true of any other city among the 26 studied.

Boise spends a larger proportion of her school money for the payment of instruction than is true of the average or of the median city of the 23 studied or of the entire group of cities in the United States of 25,000 to 100,000 population.

In addition to these facts, an analysis of ten years of Boise's school expenditures shows very slight increases in spite of the rapid increase in the city's population and wealth and the more recent high costs.

The arguments of these facts, together with those brought out in other parts of this report, are, in the judgment of the survey staff, unanswerable in their claims for a larger expenditure for schools in Boise. Boise is not at the foot of the list of cities of her class in school expenditures; but she is far from being in the lead of those cities, and at most points Boise is no better than average or below average. A slight increase in tax rate would give to the schools the money they need to get out of the "average" and into the "modern" group of city school systems.

In business management Boise's greatest need is for the adoption of a budget system, accompanied by a more detailed system of accounting. A careful plan of records showing unit costs is highly desirable and almost a necessity in working out a budget.

To carry on the business of the schools satisfactorily, the clerk of the board should have added to his ordinary duties as clerk those of purchasing agent, and he should be furnished with proper distributing and storage facilities, as well as the necessary clerical assistance.

With these changes, all of which are believed to be thoroughly feasible, Boise would have a modern system of business management.

## CHAPTER XIII

### SUMMARY AND RECOMMENDATIONS

(*Sears*)

**T**HE following is a brief statement of the more important criticisms and recommendations presented in this survey:

1. From the standpoint of maintaining a school system Boise is favorably situated in respect to its political and geographical location, the composition and age distribution of its population, the low cost of its government, its present low tax rate, its prospect for rapid growth and increase of wealth, and the generally high intellectual level of the population.

2. Because of its location and prestige Boise is responsible for exercising large educational leadership in the Northwest and so should be satisfied with nothing short of the very best in education. Boise should be the educational experiment station for a territory much larger than the state.

3. The administrative machinery of the city's schools is working harmoniously, but with only fair economy, and needs revision in the following particulars:

(a) The board should do away with its standing committees and operate as a board only.

(b) The superintendent should be relieved of much of his present responsibility for the supervision of instruction.

(c) Teaching principalships should, in principle and to a large extent in practice, be done away with and supervising principalships established.

(d) The management of attendance should be in the hands of school and not juvenile court machinery.

(e) The present school nurse should be made su-



pervisor of health and attendance and be given at least one assistant to serve mainly as home visitor and attendance officer.

(f) The present clerk of the board should be made purchasing agent and in that capacity be a member of the superintendent's staff.

(g) The present building inspector should be made superintendent of buildings and grounds having general oversight of cleaning and repairing buildings and should be a regular member of the superintendent's staff. Janitors should be under the direct charge of school principals.

4. The extent of the present teaching staff is inadequate for any except a formal curriculum and should be supplemented by five or six supervising principals, three or four teachers for ungraded rooms, and several supervisors of special subjects such as play and physical education, domestic science, etc.

5. Boise is paying its teachers something like average salaries, but in view of the high class of service which the city expects and in view of present money values these salaries are still too low.

6. Boise's high school course of study is in the main excellent and the outlines now in preparation should be printed. More laboratory work in the social science courses, better coördination of commercial work with other lines of work, better facilities for evening and continuation courses, and a more liberal offering in art expression and music are strongly recommended.

7. The elementary courses are in need of a thorough revision. Many of the courses contain excellent materials, but the courses need to be balanced up.

8. To bring about the desirable changes in Boise's curriculum, a junior high school organization should be effected at an early date, after which several prevocational courses should be offered.

9. Supervision of instruction, of health and physical de-

velopment, and of janitorial service is, in varying degrees, inadequate.

10. The efficiency of instruction as observed and as indicated by tests is somewhat below par in certain particulars but up to standard in others. Children write rapidly enough but not legibly enough; in some classes they spell well enough or too well, but in others they are weak; in arithmetic they handle combinations of whole numbers fairly well, but not so with fractions.

11. There are now existing very serious ill-adjustments in the allotment of time to the various studies in the elementary schools which may in part account for the far too wide variation in test results. To correct this and to overcome these wide variations by a more perfect classification of the children is a function of supervision.

12. The amount of retardation in the schools is not unusually large, but there is enough to warrant the recommendation that schools should make provision for a number of ungraded classes. The results of the tests also point clearly toward this need, and unless better supervision can be provided the need is urgent.

13. Very great additions to the present playground equipment are needed. The schools are almost without play apparatus, so important in the health-development work in the schools.

14. One of the weakest points in Boise's school system is its buildings. As measured, they are from 20 to 40 per cent below standard. Though well located and provided with proper play space, they are without play apparatus, they are without proper fire protection, and they are without much needed telephones. They have few adjustable seats and desks, very inadequate and unsanitary toilets, and too few drinking fountains.

15. Present articulation between elementary and high school is good, though by the organization of a junior high school and the accompanying enrichment of the curriculum this articulation could still be improved.

16. Educational and vocational guidance in the schools is much neglected, though the need for both is clearly shown by this report.

17. A part-time educational and vocational counselor, competent to use mental and other necessary tests; uniform blanks for recording necessary data pertaining to these problems; the organization of "life-career" classes and the development of a system of vocational placement by which class training would be supplemented are strongly urged as important needs in upper grade and high school classes.

18. The development of a junior college is possible and altogether desirable as a culminating feature of Boise's school system.

19. Boise's expenditures for the maintenance of schools have not kept pace with the growth of the city's population and wealth and are at present not above — in fact, in some respects they are below — the average for cities of that class as measured by the best means at hand. It is accordingly recommended that the rate of tax for schools be slightly increased in order that the most important of the needs set forth in this report may be realized and thus give to Boise the place of leadership which the city of right ought to maintain.

20. School expenditures in Boise are evenly divided between elementary and high schools. Considering the present efficiency of the two, this division should be maintained for at least the next few years.

21. It is recommended that Boise adopt a budget system of finance for its schools and put into use a more detailed system of cost accounting.

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